AIDS and Intravenous Drug Abuse Among Minorities

National Institute on Drug Abuse
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

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5600 Fishers Lane
Rockville, MD 20857

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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This publication is based on papers presented at a technical review meeting sponsored by the National Institute on Drug Abuse in Brooklyn, New York, in December 1987.

DHHS publication number (ADM) 90-1637
Printed 1989

Foreword

The grim reality is that reported AIDS cases in the United States are now approaching 100,000. No one knows for certain how many people are infected with the Human Immunodeficiency Virus (HIV), nor how many in the foreseeable future will develop clinical manifestations of AIDS. Predictions are for continued growth in numbers of HIV-infected persons and numbers of AIDS cases. Any hope that this trend can be curbed or turned downward rests on our ability as a Nation to effect changes in personal behaviors associated with the transmission of HIV. To this end it has become essential for individuals, organizations, communities, and, indeed, society to gain an understanding of such behaviors and the context in which they occur.

Sexual activity and psychoactive drug use practices permit the exchange of biological fluids in which the virus can survive and thrive. Use of drugs by injection and sexual contact with infected persons create a polydimensional network of potential personal risk for transmitting and/or contracting HIV. Prevention is possible if people know how the virus is transmitted, know how to avoid taking transmission-associated risks, and are willing and able to make changes in their lives that will reduce or eliminate the risks.

This report summarizes presentations made at a NIDA-sponsored technical review meeting titled "Minority Issues Regarding Intravenous Drug Abuse and AIDS." The 2-day meeting was coordinated by the Addiction Research and Treatment Corporation in Brooklyn, New York.

The purpose of the technical review meeting was to make a beginning effort at examining the array of sociodemographic variables that contribute to the diversity of at-risk behaviors among minority intravenous drug abusers. It is clear that minority persons and minority communities are suffering disproportionately in this epidemic. Through enhanced understanding of risk-associated patterns of behavior and lifestyles, we may be able to make a difference in the lives of men, women, and children.

Much has been learned about the virus, including its biological characteristics, modes of transmission, and some understanding of how the disease progresses from initial infection to clinical symptomatology to AIDS. What we have not learned much about is how best to help people behave in ways that will optimize their well-being. As never before we have a great need for scientifically sound information to help us acquire a better understanding of the behavioral aspects of this disease, insight into real life conditions in which human behaviors take place, and respect for the cultural diversity that characterizes our society. A national commitment to the conquest of AIDS rests on no less.

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Contents

Contents (continued)

III. Related Issues

I. OVERVIEW OF IMPACT

1. A Perspective on the Spread of AIDS Among Minority Intravenous Drug Abusers

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The acquired immunodeficiency syndrome (AIDS) epidemic presents formidable challenges for nearly every aspect of society. Despite significant advances in understanding AIDS, somber morbidity and mortality statistics remind us of the human toll associated with this epidemic. The devastation is particularly acute among those portions of the United States population already overrepresented in excess morbidity and mortality due to cancer, cardiovascular and cerebrovascular diseases, diabetes, and chemical dependency (DHHS 1985).

Prevention and health education initiatives currently hold the greatest prospects for controlling the spread of AIDS. Thus, known methods of infection transmission serve as important points for intervention and prevention, and they have special public health implications for blacks and Hispanics.

This chapter explores the contribution of intravenous drug abuse to the disproportionate prevalence of AIDS and human immunodeficiency virus (HIV) infection in black and Hispanic populations. A review is undertaken of some of the current and proposed efforts to reduce intravenous drug abuse related HIV transmission, and some proposals for future considerations and directions are offered.

Prior to beginning this discussion, two very important issues must be clarified. First, while the focus of this review is on blacks and Hispanics, it should not be inferred that other minority groups such as Asians, Pacific Islanders, and Native Americans do not experience excess HIV related morbidity and mortality. Although the relative risks of AIDS for these populations, as compared to blacks

and Hispanics, is smaller, Asians, Pacific Islanders, and Native Americans would also benefit from understanding the pivotal role that intravenous drug abuse plays in the AIDS epidemic.

Second, it should also not be assumed that other routes of acquiring HIV infection are insignificant in the spreading of AIDS in black and Hispanic populations. Homosexual and bisexual HIV-exposing behaviors are important in the epidemiology of AIDS and HIV infection in ethnic/racial minorities. Intravenous drug abuse, however, is a significantly greater public health challenge resulting from the heterosexual transmission of HIV and poses a particular threat to inner city black and Hispanic communities.

SCOPE OF THE PROBLEM

Of the 47,436 total AIDS cases reported as of December 7, 1987 to the Centers for Disease Control (CDC), 25 percent were associated with intravenous drug abuse. Of the 12,938 heterosexual and adolescent AIDS cases reported, 62 percent were associated with intravenous drug abuse (CDC 1987*a*).

The significance of intravenous drug abuse in the development of AIDS in women and children is just as startling. Approximately 50 percent of the cases of AIDS among adult females have a history of parenteral drug use. Another 30 percent of adult female AIDS cases is attributed to heterosexual transmission. This last category is largely associated with sexually transmitted HIV infection from male intravenous drug abusers (IVDAs) (Guinan and Hardy 1987). Seventy-six percent of AIDS among children has been traced to parents with AIDS or increased risk of AIDS (CDC 1987*a*). Evidence of parenteral drug use by the mother or the sex partner of the mother has been revealed in the overwhelming majority of pediatric AIDS cases. Thus, intravenous drug abuse is of considerable importance in the spread of AIDS among adult heterosexuals, women, and children.

It might be assumed that these national patterns hold in all regions of the country, but they do not. The distribution of AIDS by transmission category differs significantly in various geographic locations. The geographic prevalence of intravenous drug abuse is a major factor in determining not only the aggregate total of AIDS cases, but also the sexual distribution and prevalence of AIDS in the pediatric age group.

It could be said that the United States is in the midst of a number of AIDS epidemics. The features of each epidemic are predicated upon the geographic prevalence and nature of HIV-exposing behaviors around the country.

HIV Disease in New York State

AIDS is of particular concern to New Yorkers. Approximately 26 percent of the total reported cases, 32 percent of pediatric cases, and 47 percent of adult female cases of AIDS reside in New York State, principally in New York City (CDC 1987*a*; Bureau of Communicable Disease Control 1987).

Black and Hispanic adult populations of New York have the dubious distinction of having a higher cumulative incidence of AIDS than any racial/ethnic group in any other state (CDC 1986*a*). In AIDS cases among children, blacks and Hispanics comprised 54 percent and 23 percent of pediatric AIDS cases nationwide and 60 percent and 33 percent, respectively, of New York's pediatric cases (CDC 1986*a* and 1987*a*). This disproportionately greater risk experienced by New York's racial/ethnic minorities is not coincidentally associated with intravenous drug abuse linked to AIDS.

New York's concentration of substance abusers contains an overrepresentation of black and Hispanic populations. The best evidence for this is derived from surveys of patients enrolled in drug treatment. In the last nationwide survey, conducted by the National Institute on Drug Abuse, New York had the highest combined percentage of black and Hispanic enrollees in drug treatment (NIDA 1982). The concurrent geographic distribution of intravenous drug abuse associated AIDS and of black and Hispanic IVDAs further underscores the critical role of parenteral drug abuse in the prevalence of AIDS in minorities.

New York's disproportionately greater number of AIDS cases is largely believed to be attributed to its large community of substance abusers. Over 850,000 persons or almost 6 percent of the State's population are heavy substance abusers. Over 258,000 of these are calculated to be steady IVDAs (Division of Substance Abuse Services 1985).

Nearly 200,000 of these IVDAs live in New York City, representing approximately one-half of the estimated 350,000 to 400,000 nationwide intravenous drug users (Ginsburg 1984; Drucker 1986; Brown et al. 1986; Friedland and Klein 1987). Roughly one-quarter of the national AIDS case reports originate in New York City.

Intravenous drug abuse is linked to 32 percent of adult male AIDS cases, 60 percent of female, and 77 percent of pediatric New York City AIDS cases (NYC Department of Health 1987). These statistics translate into approximately 82 percent of AIDS in IVDAs occurring in the New York City metropolitan area (Koplan et al. 1986).

The case fatality for male and female IVDAs with AIDS (59 and 61 percent, respectively) exceeds that of the national average. In a cohort of 5,833 AIDS patients diagnosed prior to 1986, 8.6 percent of the patients, for whom AIDS could be traced to homosexual behaviors, died soon after the time of diagnosis (Rothenberg 1987). In contrast, 15.2 percent of IVDAs in this cohort did not survive following diagnosis. As this demonstrates, intravenous drug abuse offers particularly tough challenges to New York City's ability to respond to the AIDS epidemic (Weinberg and Murray 1987).

IVDAs, AIDS, and Black and Hispanic Communities

While intravenous drug abuse has a significant impact on the prevalence of AIDS in the general population, its effect on AIDS-related morbidity and mortality in blacks and Hispanics is devastating. Together, black and Hispanic populations account for 39 percent of the AIDS cases reported to the CDC even though these combined ethnic/racial groups comprise only 18 percent of the U.S. population (CDC 1987*a*; Bureau of the Census 1980). Several investigators have reported various HIV-risk patterns and a disproportionate incidence of AIDS experienced by blacks and Hispanics, as compared to whites (Hopkins 1987; Bakeman et al. 1986*a,b*; Bakeman et al. 1987; CDC 1986*a*; Friedman et al. in press; Brown et al. in press).

AIDS cases among blacks and Hispanics are distributed across the same transmission categories as those of white AIDS cases. Distinctive differences, however, exist among ethnic/racial groups in the prevalence of various behavior patterns associated with HIV AIDS cases. Cases to which only homosexual/bisexual behaviors could be linked account for 79 percent of AIDS cases among whites, 39 percent among blacks, and 48 percent among Hispanics. In comparison, intravenous drug abuse associated AIDS cases comprise 6 percent of AIDS cases among whites, 35 percent among blacks, and 35 percent among Hispanics.

AIDS cases among whites tend to be linked to homosexual/bisexual behaviors, and transfusion related infection. In contrast, AIDS cases in black and Hispanic populations were more likely to be associated with intravenous drug abuse or heterosexual contact with persons at increased risk of developing AIDS. Upon further review, these heterosexual contacts are found to be largely IVDAs.

One of the epidemiologic topics often discussed concerns the extent to which differences in disease acquisition, i.e., racial or genetic predisposition, explain the disproportionate risk of AIDS in black and Hispanic populations. An examination of the racial distribution of AIDS cases in each of the acknowledged transmission routes is one way to shed some light on this issue. Because nearly 95 percent of the cumulative total of AIDS cases are linked to homosexual/

bisexual males, IVDAs, and heterosexual contacts, the following discussion is limited to these transmission categories.

Of the 34,498 AIDS cases associated with homosexual/bisexual behaviors, 73 percent are white, 15.8 percent black, and 10.2 percent Hispanic. In comparison, the 11,643 intravenous drug-associated AIDS cases are 33.5 percent white, 42.7 percent black, and 23.2 Hispanic. Because IVDAs account for 60 percent of sexual partners in AIDS cases traced to heterosexually transmitted HIV infection (Chamberland and Dondero 1987), AIDS cases in this category represent another consequence of intravenous drug abuse. The racial distribution of the 1,909 AIDS cases in the heterosexual transmission category is 16.4 percent white and 83.1 percent black and Hispanic. These statistics from the three major routes of AIDS acquisition strongly suggest that IV drug abuse is a prominent factor in the occurrence and spread of AIDS among black and Hispanic populations.

Another approach to determining what factors may contribute to the greater risk of AIDS among blacks and Hispanics might be to exclude one of the acknowledged transmission routes and analyze the racial distribution of the remaining cases. While there are some real limitations to this approach, some sense of epidemiologic tendencies can be gained. If all AIDS cases associated with homosexual/bisexual behaviors are excluded, whites comprise 29 percent, blacks 49 percent, and Hispanics 22 percent of the remaining AIDS cases. If, on the other hand, all the IVDA-associated cases of AIDS are excluded, whites comprise 71 percent, blacks 19 percent, and Hispanics 10 percent of the residual AIDS cases. These data manipulations suggest that the exclusion of IV drug abuse would more closely bring the racial distribution of AIDS to the racial distribution of the U.S. population. On the other hand, in excluding homosexual/bisexual behaviors, the largest single category associated with AIDS, blacks and Hispanics account for 71 percent of the cases.

A number of reports have demonstrated quite effectively that the greatest predictor of the geographic distribution of AIDS among blacks and Hispanics is the prevalence of AIDS traced to intravenous drug abuse (Hopkins 1987; CDC 1986*a*; Bakeman et al. 1987). The northeastern region of the United States has both the highest cumulative incidence of AIDS among minority populations and the greatest prevalence of AIDS associated with the abuse of injectable substances. This is not a consistent finding in the AIDS epidemiology for whites.

As important as AIDS case reports are, they–in and of themselves–provide only a limited view of the epidemiology of AIDS among blacks and Hispanics. A host of questions arise surrounding the significance of intravenous drug abuse-associated AIDS among ethnic/racial minorities. For example, to what extent

does injectable drug abuse contribute to the poorer survival of blacks and Hispanics, as reported in the published literature (Rothenberg et al. 1987; Weston 1986)? The paucity of survival information in the AIDS-related literature focusing on minority populations or drug abuse-related issues may be attributable to at least two factors. First, the relative infancy of the AIDS epidemic may explain the relative scarcity of any survival reports. Second, in spite of the relative newness of the AIDS epidemic and despite a veritable explosion in the AIDS related literature, very few published investigations on AIDS involve issues related to intravenous drug abuse or ethnic/racial minorities. Consequently, no study of survival of AIDS patients has been able to demonstrate any connection between the poorer survival of blacks and Hispanics with the poorer survival of those who acquire AIDS through the intravenous drug transmission category.

Other questions associated with the IVDA-AIDS-ethnic minorities connection include: What role does drug abuse play in any biomedical, socioeconomical, and political factors associated with ethnic/racial differences in the natural history of HIV infection? Does parenteral drug abuse and AIDS among IVDAs provide any insight as to the future of the AIDS epidemic among blacks and Hispanics? More importantly, what implications does drug abuse associated HIV infection have for the survival of black and Hispanic populations and their progeny? These crucial research and policy questions are also relevant to the development and the evaluation of effective interventions in halting the devastation of this epidemic for ethnic/racial minorities.

IVDAs, AIDS, and Tuberculosis

As suggested previously, the future of the AIDS epidemic cannot be fully appreciated in discussions limited to persons meeting the CDC surveillance definition of AIDS. As many of the reports of the Public Health Service state, case reports provide only a superficial view. There is clear recognition that individuals who demonstrate serological HIV infection but do not satisfy the CDC criteria to be categorized as AIDS are also extensions of the epidemic.

What is not so widely appreciated is that the increase in other infections among the drug addicted may also represent a dimension of the AIDS epidemic. These infections (mycobacteria tuberculosis, endocarditis, bacterial pneumonias, etc.) are not among the opportunistic infections typically featured in clinical discussions of AIDS. It should also be made clear that these infections are well-recognized consequences of addiction (Sullam et al. 1985; Vartian et al. 1985; Reichman et al. 1979; White 1973; Gottleib 1986). What is startling is the rise in these infections in concurrence with the increased prevalence of AIDS (Hopkins 1987; CDC 1986*b*; CDC 1987*b,c*; Pitchenik et al. 1984 and 1987; Sunderam et al. 1986; Chaisson et al. 1987*b*; Stoneburner 1987).

In one particular investigation conducted in New York (Stoneburner 1987), the death rates due to these nonopportunistic infections increased among IVDAs parallel with the increasing case reports of AIDS. This study provided significant evidence that if the IVDAs experiencing these excess deaths are added to those persons meeting the CDC AIDS surveillance definition, then intravenous drug abuse, not homosexual/bisexual behavior, would be the leading transmission category for the acquisition of HIV related disease in New York City.

The significance of the increase in these infections resides in two important consequences. Focusing on tuberculosis, the greater prevalence of this infection among minorities is alarming (CDC 1985, 1986*c*, and 1987*d,e*). The combination of the fact that minority populations are overrepresented among HIV-infected IVDAs and that IVDAs have an enhanced risk of tuberculosis may in part explain the excess prevalence of tuberculosis in ethnic/racial minorities in some regions of the United States. Most evidence points to a role of HIV infection in the development of tuberculosis in a person with previous latent tuberculosis infection. However, clinical tuberculosis resulting from newly acquired tuberculosis infection cannot be unequivocally excluded as a possible mechanism. Secondly, because tuberculosis infection, in contrast to HIV infection, can be casually contracted, reducing the occurrence of tuberculosis is another reason for developing effective programs to reduce AIDS and HIV infection.

Other Dimensions of the Problem

Evidence of serological HIV infection, in the absence of satisfying the CDC criteria for AIDS, is one spectrum of the epidemic that has received increasing attention (CDC 1987*f,g*; Watkins 1987). A recent review of the empirical mathematical models used to estimate the national HIV prevalence has resulted in a rather wide range of from 276,000 to 1,750,000 persons who were felt to be infected as of 1986 (CDC 1987*g*). This same report recognized the need for further refinement in data and mathematical models to enhance the monitoring of the epidemic. Much of the data referred to in this report is derived from seroprevalence studies of HIV infection. Because a discussion of the advantages and disadvantages of screening (mandatory or voluntary) is beyond the scope of this paper, no attempt will be made to pursue this very important and controversial issue. However, seroprevalence studies are invaluable when combined with biomedical, behavioral, and socioeconomic variables in peer-reviewed and human subject protected research protocols. These types of scientific examinations provide a wide range of information from the clinical manifestations and pathogenesis of HIV infection to the behavioral and sociological factors associated with infection and disease progression. More importantly, these types of investigations provide useful fuel for primary, secondary, and tertiary prevention.

As important as AIDS and HIV related morbidity and mortality data are, there are yet other dimensions of the epidemic that are often unappreciated. IVDAs and ethnic/racial minorities are often concentrated in urban, economically disenfranchised areas. How are these communities, which already suffer from inadequate health care and social service resources, going to be able to accommodate AIDS related increases in demands for these services? These demands are emanating from a sector of these communities, mostly those aged 20 to 40, who prior to this epidemic were infrequent consumers of health care services. The previously mentioned age range often represents the most productive years of the people of a society. Thus, further erosion of the economic base of black and Hispanic communities due to the unavailability of an important component of the work force is another potential consequence of the HIV epidemic.

Possibly the most devastating specter of this epidemic is the impact on the future of the black and Hispanic family. In areas of the country where the relationship between intravenous drug abuse and AIDS among black and Hispanic populations is the strongest, there is a concurrent increase in the number of black and Hispanic children with AIDS left orphaned in municipal hospitals. Drug abuse is often a prominent feature in the medical histories of the mothers of these children.

These are but a few of the features of the human toll of the HIV epidemic that often escape attention in discussions of AIDS. They suggest that interventions that impede HIV transmission among IVDAs may have potential benefits beyond the IVDAs themselves to the black and Hispanic communities in which IVDAs disproportionately reside. Well-designed scientific examinations of IVDAs in relation to HIV transmission are among the most promising sources of information for prevention efforts in these communities.

INVESTIGATIONS OF DRUG ABUSERS

Previous studies of IVDAs have focused on very selective populations such as prison inmates (Wormser 1983; Hanrahan 1984) or hospitalized patients with a diagnosis of AIDS (Hanrahan 1984; Small 1983; Masur et al. 1982; Greene et al. 1982; Mayan et al. 1985). These investigations have been unable to provide information to estimate the relative associations between infection-exposing behaviors and other biological factors. Although more extensive examinations were made in two separate studies by Mayan (1985) and Friedland et al. (1985), significant questions remained regarding the role of many behavioral aspects of drug use and the acquisition of infection. The smallness of the sample sizes of these populations and the reasons they came to the attention of these investigators also limit the usefulness of these studies.

Seroprevalence studies have the advantage of investigating drug use patterns and other HIV-exposing behaviors prior to the development of AIDS (Friedman et al. in press; Brown et al. in press; Weiss et al. 1985; Chaisson et al. 1987*a*; Schoenbaum et al. 1986; Watters et al. 1986; CDC 1984; Spira et al. 1984; Cohen et al. 1985; Levy et al. 1986; Robert-Guroff et al. 1986). However, one must closely evaluate these examinations with regard to the geographic location in which they are conducted, the prevalence of drug use in these locations, the drug use patterns assessed, laboratory methods in confirming HIV infection, and the selection of the IVDA populations participating in these studies. Differences among serosurveys may, in part, be attributed to any one of the above. From these studies, the prevalence of HIV infection among IVDAs has ranged from 1.7 percent (Levy et al. 1986) to over 80 percent (CDC 1984), although in the latter, it is not clear whether confirmatory testing was uniformly performed.

Of the drug abuse patterns explored, whether among IVDA AIDS patients or in HIV serosurveys, needle sharing (Weiss et al. 1985; Chaisson et al. 1987*a*; Cohen et al. 1985; Levy et al. 1986; Robert-Guroff et al. 1986; Brown et al. 1987; Lange et al. in press; Brown and Primm 1987; Black et al. 1986), frequency of injection (Weiss et al. 1985; Chaisson et al. 1987*a*; Cohen et al. 1985), injection setting (Friedland et al. 1985), and treatment modality (Mayan 1985) were found to be significant factors correlated with HIV infection.

Interestingly, blacks and Hispanics experienced a greater rate of HIV infectivity in many of these studies. However, only two of these serosurveys have been able to demonstrate a statistically significant greater risk of HIV infection among black or Hispanic subjects (Chaisson 1987*a*; Black et al. 1986). In the Chaisson et al. (1987*a*) study, this finding remained significant despite controlling for needle sharing. Further, these investigators found that whites, in contrast to minorities, had a lower HIV seropositivity rate and a higher number of persons with whom they shared needles. This startling finding was also a feature in a study conducted at this institution (Brown et al. 1987).

In a number of seroprevalence studies, alterations of various immunological and other laboratory parameters have been seen (Brown et al. 1987, in press; Des Jarlais et al. 1987). Whether these findings are a reflection of a greater susceptibility as an antecedent to HIV exposure or the consequences following infection is often not discernible. The answer to this question is particularly elusive. While HIV exposure is a proven prerequisite to the development of AIDS or AIDS related diseases, the pathogenesis of HIV infection might well be influenced by the prior immunologic status of the host. It may well be important to assist IVDAs to reduce all behaviors that have the potential for immunological impairment. Interestingly, one study (Des Jarlais et al. 1987) demonstrated that continued drug injection was associated with T4 cell loss among the HIV

seropositive IVDAs who had not developed AIDS or AIDS related complex. Many more investigations providing this type of information are sorely needed.

AIDS STUDIES INVOLVING IVDAS IN TREATMENT

The particular advantages of expanding the understanding of AIDS through the analysis of the role of intravenous drug use was reviewed at a National Institutes of Health workshop in 1983 (Edelman 1984). Intravenous drug users, as a group, as compared to the homosexual/bisexual risk group, tend to travel very little, allowing for an enhanced ability to perform longitudinal studies. Analysis of data from case control studies could lead to estimations in the relationship between the frequency of particular types of behaviors (such as needle sharing) and cofactors in the development of AIDS and other associated infections.

The registries maintained in most States of persons involved in various forms of substance abuse treatment and the considerable literature on estimating the extent of substance abuse assist in providing more reliable statements regarding the size of the IVDA population.

Epidemiologic studies of IVDAs in drug treatment programs have other distinct advantages. The opportunity for longitudinal studies is improved by virtue of the fact that most patients visit their drug treatment programs at least twice per week. Since most patients tend to diminish drug use after admission, there is a greater ability to comment on time of exposure. Even in those patients who continue illicit drug use, regularly collected urine samples for toxicology are valuable instruments in estimating exposure times and validating self-reports of ongoing abstinence from illicit substances.

Drug treatment programs offer the greatest potential to involve sufficient numbers of IVDAs to make results from scientific surveys more meaningful. Also, since persons who use injectable drugs are felt to represent the HIV transmission route to the nonintravenous drug using population, longitudinal examinations of sex partners of IVDAs in treatment have a significant potential to improve our understanding of heterosexual HIV transmission.

Investigations in populations of IVDAs are not without their problems. The reliability of this subpopulation is an important consideration, and the turnover rate in patient enrollment in drug treatment programs can be as high as 50 percent in some programs. IVDAs in drug treatment also represent a very selected population, and results derived from these investigations cannot always be extrapolated to the universe of parenteral drug abusers.

Studies of IVDAs not in treatment do not often lend themselves to validation efforts and offer real difficulties, if not dangers, in data gathering. A number of

investigators have developed intriguing approaches to improve data gathering, longitudinal followup, and validation. Unfortunately, faculty in traditional academic settings and reviewers used by the great majority of medical journals are often insensitive to the virtues and significance of these investigative efforts. Consequently, scientific examinations involving IVDAs outside treatment settings are scarce, and the results of those few studies that have been conducted are not widely circulated.

While the number of AIDS cases attributed to heterosexual transmission is relatively small, this is the most rapidly rising transmission category, especially among black and Hispanic populations. Yet, a scan of the AIDS related literature reveals that this dimension of the epidemic has notably scarce coverage. The literature that exists regarding sex partners of the HIV-infected is distinguished by the smallness of the sample sizes of sex partners, a predominance of hemophiliacs with a paucity of IVDAs as the index cases, a scarcity of black or Hispanic study subjects, and a predominance of studies in which the sex partner is investigated only after the index case meets the CDC definition of AIDS. Explorations of these types have little potential for unraveling the role of IV drug use in the subsequent development of HIV infection in the sex partners of IVDAs–sex partners who are disproportionately female, black, and Hispanic.

In the context of what is understood about the triangular relationship between intravenous drug abuse, HIV infection, and ethnic/racial minorities, many of the current efforts and proposals to halt HIV transmission may be laudatory for their intent, but many of these studies are not adequately justified by scientific or epidemiologic evidence.

IVDA/AIDS INTERVENTION AND PREVENTION EFFORTS

Reaching IVDAs about AIDS

In considering the virtues of current efforts and proposals, it is especially important that a number of ingredients be included in public health efforts regarding IVDAs. The need for culturally sensitive information and approaches has been a common rallying point for many minority, community-based organizations. As for the messengers–television, newspapers, magazines, and pamphlets are insufficient vehicles of communication for IVDAs. Interventions need to be logistically tailored so as to more greatly assure contact with IVDAs. A cadre of foot soldiers to get out and deliver appropriate information is probably one of the most efficient and effective ways to reach IVDAs in large metropolitan areas. Evidence of the successfulness of this approach has been seen in San Francisco, Newark, and New York City. Outreach workers (some

of whom are former IVDAs) are providing word-of-mouth information in parts of these cities where intravenous drug abuse is highly prevalent. Further, a number of surveys among IVDAs have demonstrated that IVDAs are quite knowledgeable about AIDS and ways to reduce further HIV exposure. The bottom line, however, is the extent to which this knowledge is transformed into consistent HIV risk reduction behaviors.

Two factors are responsible for many of the difficulties in demonstrating the true effectiveness of AIDS related health interventions. One, the rather long latency period in HIV related disease offers considerable difficulties in determining whether behavioral changes, in and of themselves, have been responsible for any observed reduction in the number of AIDS cases reported. This lengthy time period allows for the potential participation of beneficial or deleterious intervening variables. Using changes in the numbers of AIDS cases as a guide to the effectiveness of health education efforts ignores the benefits of using data derived from currently available serological instruments to determine HIV infection prior to the development of AIDS. Thus, a more appropriate standard of measurement might be the incidence and prevalence of HIV infection.

Rigorously evaluating health educational efforts in this manner would necessitate a longitudinal investigation of a considerably large cohort with substantial investments of capital and human resources for its implementation. Few, if any, single sites could muster enough IVDAs to meet the requirements of such an extensive undertaking. Consequently, collaborative studies involving a number of sites are crucial.

The second major challenge to designing HIV risk reduction programs for IVDAs results from the problem that IVDAs are not a homogenous group in their HIV-exposing behaviors. While a given approach may have satisfactory results in one area, this same type of intervention may not be as promising in another region. There is substantial variation in the level of HIV infection and HIV-exposing behaviors geographically (CDC 1984; Levy et al. 1986; Brown et al. 1987; Lange et al. in press). This would suggest the need for varied approaches in AIDS related interventions targeted for IVDAs. Because the current approaches directed at IVDAs are few in number and recent in their history, techniques for evaluating their benefits are also in their infancy. The use of outreach workers and former IVDAs, as mentioned above, has sufficient theoretical grounds to expect favorable results. Additional benefit could be gained if serological correlation was available on the recipients of these efforts.

Needle Sterilization Prevention Efforts

The role of needle sterilization efforts in HIV risk reduction programs designed for IVDAs has become the subject of an ever-widening public policy debate.

One must separate these interventions into those programs that provide information on how to sterilize syringes and needles used in parenteral drug administration and those efforts that exchange new sterile syringes and needles for contaminated ones. Both intervention approaches are grounded in reducing the role of needle sharing in the epidemiology of AIDS and HIV infection among IVDAs. Thus, if the presence of HIV-infected blood in syringes or needles is eliminated, then these articles of illicit drug abuse would no longer serve as vehicles of HIV transmission. The interventions that provide information about sterilizing needles and syringes often provide bleach to serve as the sterilizing solution. The fragility of the HIV renders it highly vulnerable to this solution. The simplicity of the instructions and the inexpensiveness of the bleach are clear assets of this approach.

There are very real obstacles to conducting needle exchange programs in the United States. For one, many State laws prohibit the over-the-counter sale or possession of syringes or needles without a prescription. Many communities (and some drug treatment professionals) view any needle sterilization efforts as encouragement to continue the abuse of injectable substances. Still other opponents argue that these interventions may serve to recruit new people to the practice of parenteral drug abuse. Finally, others in opposition contend that the cooker, which is commonly used and shared, can also contain drugs and other materials contaminated with the HIV virus. While these arguments are persuasive, the experience in Europe, where needle exchange programs are in progress, does not support these suspicions. Admittedly, many of the European intervention efforts directed at IVDAs are too short in duration to make any conclusive statements. The early indications from a number of areas show a downward trend in needle sharing among needle exchange program participants (NIDA 1987). Additionally, some of the sterile needles/syringes provided are not returned and serum HIV-status information is not available.

One nonetheless wonders about the potential usefulness of these efforts given the physical, sociological, and psychological context in which needle sharing takes place (Howard and Borges 1970; Dolan et al. 1987). It is unclear whether these programs will have equal benefits among the sexes or races. As mentioned previously, needle sharing practices did not explain the disproportionately greater HIV seroprevalence experienced by blacks and Hispanics as compared to whites (Chaisson et al. 1987*a*; Brown et al. 1987). In an investigation conducted at the Addiction Research and Treatment Corporation, needle sharing represented a greater risk of HIV exposure to black and Hispanic female IVDAs than to their ethnic/racial minority male counterparts (Murphy et al. 1987).

Despite all the potential shortcomings, there is one unescapable fact. Unless a well-designed and reasonably controlled pilot needle exchange program is given

earnest support to evaluate the previously registered concerns, speculation will continue to fuel this public policy debate.

The Need for Expanded and Improved Drug Treatment

Another proposal is also gaining momentum in discussions of AIDS-related interventions targeted at IVDAs. Expanded drug treatment is felt to be an approach that will reduce HIV exposure by enabling intravenous drug abusers to control their addiction and, thus, stop their use of the vehicles that transmit HIV infection. As discussed earlier, a number of studies have demonstrated lower infection rates associated with duration of drug treatment enrollment (CDC 1984; Brown et al. 1987). Only a minority of the estimated number of IVDAs are enrolled in treatment, and many express a desire to enter drug treatment. While it may appear that the evidence in support of expanded drug treatment is virtually unanimous, caution and rational thinking are necessary in planning treatment expansion.

Simply increasing the quantity of the slots in drug treatment programs is insufficient. There needs to be a concurrent improvement in the quality of services. Given the fact that drug treatment programs represent the greatest opportunity to access IVDAs on a regular basis, these institutions need to be improved to the level where they can offer comprehensive primary medical care. This will enhance their ability to provide earlier recognition (and intervention) of HIV-related consequences. A perfect example is the issue of tuberculosis infection discussed earlier. If drug treatment programs were appropriately structured, prophylactic treatment for latent tuberculosis infections and long-term treatment for clinically manifested infections would be beneficial to the IVDAs themselves and the communities in which they reside. These issues demand that the true potential of drug treatment not be sold short for the comparably incremental benefit of merely expanding the number of drug treatment facilities. The public health significance for the IVDAs and the black and Hispanic communities in which they reside cannot be underestimated.

Pushing Ahead in Other Areas

As for other ways to reduce HIV infection among IVDAs which will have beneficial consequences for black and Hispanic populations, an increase in the number of biomedical, sociological, and psychological investigations is critical. Scientific examinations involving the natural history of HIV infection in IVDAs, the potential heterosexual transmission from IVDAs, and the benefits of various therapeutic regions in the asymptomatic HIV infected IVDA are crucial. There is a dire need for explorations that evaluate the accessibility and availability of medical and support services in the context of HIV clinical progression. Further, studies will be important in expanding our ability to develop methodologies to

evaluate HIV risk reduction programs. Most importantly, the success of these efforts will necessitate the significant involvement of black and Hispanic populations in HIV related research, health education, and public policy development.

The AIDS epidemic has ushered in an era of a new injurious triad: intravenous drug use, ethnic/racial minority populations, and HIV related disease. AIDS case reports of morbidity and mortality clearly underscore this relationship. HIV seroprevalence studies, the concurrent rise in infections not typically associated with HIV infection, like tuberculosis, and the human toll on the communities and families of IVDAs again emphasize the unfortunate consequences of this association.

Unfortunately, given the prominence of intravenous drug abuse in the AIDS epidemic, the scientific literature and investigative efforts show an appalling underrepresentation of drug abuse related studies. While the concern to implement HIV-risk reduction interventions directed at IVDAs is rising, much more needs to be done to provide scientifically and epidemiologically based ammunition for these efforts and to assist in their evaluation. Appropriately focused energies to respond to the diverse array of issues discussed have promising public health dividends that extend well beyond the intravenous drug abuser to ethnic/racial minority populations and to society in general.

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2. Ethnic Differences in HIV Seroprevalence Rates Among Intravenous Drug Users

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The finding of ethnic differences in HIV seroprevalence rates has been one of the more consistent results in studies of intravenous drug users in the United States. There is a great need for better understanding of these results. In this chapter, we present reasons for thinking that they probably result from social factors that are associated with ethnicity.

It has also been argued that ethnic differences in seroprevalence are related to genetic differences; if so, this could have important implications for the treatment of HIV disease and for our understanding of the immune system. Understanding these differences may also be very important in designing effective AIDS prevention programs for different groups of IV drug users.

Our major focus is upon the difference between "whites" and "nonwhites" (or "minorities") in the United States. Nonwhites, as used here, includes both blacks and Latinos (Hispanics, regardless of whether they are white or black), but usually does not refer to Asians, Native Americans, or other groups. This is because we rely on a number of different studies, many of them conducted by other researchers, that sometimes imprecisely reported how they defined their categories–particularly how they treated the fact that there are both white and black Latinos. It is also because, in almost all studies, the number of subjects

Preparation of this paper was supported through grants numbered DA03574 and DA05283 from the National Institute on Drug Abuse.

who are Asian, Native American, or "other" are too small to analyze. Finally, our use of the term "ethnicity" rather than "race" reflects primarily the lack of any general term that satisfactorily describes patterns of social group differentiation in the United States.

STUDIES NOTING ETHNIC DIFFERENCES

A number of studies have examined ethnic differences in HIV seroprevalence among IV drug users (Marmor et al. 1987; Friedman et al. 1987; Schoenbaum et al. 1987; Robert-Guroff et al. 1986; Chaisson et al. 1987; Weiss et al. 1985; D'Aquila et al. 1987; Lange et al. 1987; J. K. Watters, personal communication, 1986; S. Magura, personal communication, 1987).

In all the studies conducted in the United States, whenever there were statistically significant differences among ethnic groups, *minority IV drug users had higher rates of exposure to HIV than did white IV drug users.* This pattern is clearly shown in the data presented in table 1.

METHODOLOGICAL FACTORS POSSIBLY AFFECTING STUDY OUTCOMES

The frequent finding of higher seropositivity rates among minority IV drug users compared to white IV drug users requires explanation. One possible explanation for the observed ethnic differences is that the studies had unknown research design problems. Examples of possible problem areas follow.

First, unknown sampling biases might produce consistent findings of ethnic differences across the studies. The great majority of subjects in these studies were recruited from drug abuse treatment programs. Subjects were almost always recruited on the basis that they would receive their HIV antibody test results. It is therefore possible that minority IV drug users who were likely to be seropositive were more likely to volunteer to participate in the studies, though it is by no means evident why this would occur. It certainly is not obvious why high-risk whites would choose not to participate more than high-risk nonwhites. Large-scale blinded seroprevalence studies could be used to examine the possibility that some unknown recruitment bias is responsible for the observed ethnic differences.

Second, difficulties in measuring male homosexual activity might underlie the observed ethnic differences. It is possible that black and Hispanic IV drug users may be less likely to admit male-with-male sexual activity than white IV drug users, although we do not have firm data on this point. Male-with-male sexual activity is in itself a high-risk behavior for exposure to HIV, so underreporting of these behaviors by minority drug users would, even after statistical control on

Table 1.—Comparison of white versus nonwhite HIV seroprevalence rates found in selected studies

Researchers	Location and Date	HIV Seroprevalence Rates		
		White	Nonwhite	*p*
Marmor et al.	S. Manh. Detox and MMTP, 1984	43% (35/81)	54% (110/202)	<.01[a]
Friedman et al.	S. Manh. MMTP, 1986	37% (22/60)	55% (57/103)	<.05
Schoenbaum et al.	Bronx MMTP, 1985	11% (7/63)	36% (60/167)	<.001
Robert-Guroff et al.	Queens, 1981-82	16% (3/19)	54% (20/37)	<.05
Chaisson et al.	San Francisco, 1984-85	6% (8/143)	14% (20/138)	<.05
Weiss et al.	New Jersey	31%	45%	
Weiss	New Orleans	0%	2.6%	
D'Aquila	Treatment entry, 1986-87			
	Stamford	22%	64%	
	New Haven	10%	65%	
	Waterbury	4%	55%	
	Hartford	7%	27%	
Lange et al.	Baltimore	9% (7/76)	45% (44/97)	<.001

[a]$p < .05$ for W/B/H

drug injection behaviors, create an impression that minorities were at higher risk of HIV infection.

The question of male-with-male sexual activity among different ethnic groups clearly needs more study and particularly needs the development of better methods for studying the question. For unreported male-with-male sexual activity to be the primary reason for the observed ethnic differences, of course, minority IV drug users would have to be more likely to engage in high-risk homosexual behaviors or else they would have to be more likely to engage in sex with infected gay men. Research on social relationships among drug-using gay men and on male-to-male prostitution by IV drug users is needed to determine whether ethnic differences of these types exist.

In two of the studies of ethnic differences in seroprevalence, Marmor et al. (1987) and Weiss et al. (1985), the differences between whites and nonwhites were statistically explained by drug injection behavior. In the majority of the studies, however, the ethnic differences in HIV seropositivity rates remained after statistical control on behavioral variables related to HIV exposure.

Imprecise Terminology May be a Confounding Factor

There are several ways in which difficulties in measuring IV drug use behavior might lead to the observed differences in seroprevalence rates. The concept of sharing drug injection equipment is far from precise. We have interviewed IV drug users who do not consider it to be sharing if drug injection equipment is used by sexual partners or very close friends. In these situations the equipment is perceived as jointly owned rather than one person sharing his or her equipment with another. (A possible analogy here might be with sharing food. A husband and wife who eat a meal together would not necessarily speak in terms of "sharing their food" with each other, since the food is perceived as possessed jointly.)

In addition to a possible lack of clarity regarding the term "sharing," the social nature of the group within which equipment is shared may obscure relationships with HIV exposure.

If drug injection equipment is shared primarily within a relatively closed friendship group, there is likely to be little statistical association between the frequency of sharing and exposure to HIV. If none of the members have been exposed to the virus, then the amount of sharing within the group will not be associated with exposure. Conversely, if one of the members has been exposed, then in many cases the entire group will have been exposed so that additional sharing, whether within or outside the group, would not be statistically associated with exposure.

Thus, if ethnic groups differ in behaviors–such as the extent to which they restrict needle sharing to small groups of friends, the longevity of such friendship groups, the frequency with which individuals move from one group to another, or the extent to which individual group members use contaminated syringes or needles in shooting galleries–we would not expect statistical control for needle sharing to significantly alter the statistical association between ethnicity and seropositivity.

The sharing of drug injection equipment is not uniformly defined by all IV drug users, and sharing patterns do not fit with the mathematical assumptions about any drug user being equally likely to share equipment with any other drug user that are sometimes used in modeling epidemics. These types of factors create the possibility that imprecision in questions about sharing might underlie the observed ethnic differences in rates of HIV seroprevalence.

Studies of risk factors of HIV exposure among IV drug users are inherently difficult. As long as the testing is voluntary, there will always be some form of volunteering effect. Recall of specific behaviors practiced over long periods of time will always contain some errors. The high-risk behaviors queried may be considered private matters and, particularly with respect to male homosexual activity, may lead to some denial of actual behavior.

Despite these inherent difficulties, the frequency with which ethnic differences have been found suggests that the findings have validity and require explanation beyond methodological approaches in conducting the studies.

GEOGRAPHIC PATTERN OF HIV INFECTION AMONG IV DRUG ABUSERS

It is not surprising to find differences in HIV seroprevalence rates among IV drug users in different cities. HIV was introduced into IV drug using groups at different times in different locations, and IV drug users are not a very mobile population geographically. If this same logic is applied to the parts of a large city, one would expect to find differences in seroprevalence rates in different parts of the city. Such a pattern appears to have taken place in New York City.

Table 2 presents seroprevalence rates among IV drug users attending treatment programs in different parts of New York. As can be seen in table 2, the differences in the rates from area to area are substantial and, to a large extent, overlap with differences in the ethnicity of the subjects. The ethnic differences observed in the studies in table 2 may be primarily the result of local geographic ethnic segregation among IV drug users within cities. It should be noted, however, that the Marmor et al. study, which recruited subjects from a relatively racially integrated high IV drug use part of the city, did not find statistically significant ethnic differences after controlling for drug injection behavior.

Table 2.—Variation in HIV-1 seroprevalence rates among IV Drug Users in New York City

Area	Date collected	Approximate percent positive	Source
Southern Manhattan	1984	50	Marmor et al.
Harlem and Brooklyn	1986	60	L.S. Brown, personal communication
South Bronx	1985	35	Schoenbaum et al.
Queens	1987	20	S. Magura, personal communication
Northern Bronx	1985	10	Schoenbaum et al.

Currently very little is known about the sharing of drug injection equipment across different parts of a single city, and many questions remain about such behavior. Presumably IV drug users will travel to other parts of their city to purchase drugs. Such travel into foreign territory might involve the threat of being robbed of money or the newly purchased drugs. If they do such traveling, under what circumstances would they then share injection equipment in those other parts of the city? In particular, would they be more likely to travel to areas of their own ethnicity and/or to share works with drug users of their own ethnicity in these neighborhoods?

Further study of the spread of HIV among IV drug users in single cities will help better our understanding of the observed differences in seroprevalence rates among ethnic groups. It is certainly possible that differences in seroprevalence rates represent localized epidemics of HIV infection among IV drug users living in different parts of the same city. If this is so, it then becomes important to understand why HIV would seem to have been introduced into minority neighborhoods before white neighborhoods in so many cities. It is possible that there are contributing factors, such as the greater presence of open drug selling in minority neighborhoods, that may be influencing this phenomenon.

Taking the local geography of HIV infection among IV drug users into consideration puts the question of ethnic variation in a different perspective. As opposed to concepts such as genetic susceptibility to HIV infection or absolute levels of risk behavior as explanations for the variations, this perspective is based on the concept that the same rates of HIV exposure should not be expected among IV drug users who do not live in the same neighborhoods.

The multiple localized epidemics approach fits with the observed overlap between ethnic differences and differences by neighborhoods within a city. Two primary questions have to be answered to utilize the localized epidemics approach as an explanation for observed ethnic differences in IV exposure. First, was the virus introduced first into the minority drug use parts of many cities rather than into white IV drug use neighborhoods, and if so, why? Second, are there consistently unequal rates of spread of the virus within these ethnically different neighborhoods, and if so, why?

EUROPEAN FINDINGS

Van den Hoek and colleagues (1987) have noted ethnic differences among IV drug users in Amsterdam. Similar to the American findings, IV drug users of an ethnic minority (German) were more likely to be seropositive than IV drug users from the ethnic majority (Dutch).

The reasons why ethnic minority IV drug users in Amsterdam have higher seroprevalence rates may or may not be the same as the reasons why ethnic minority IV drug users in the United States also have higher seroprevalence rates. The current parallel between the Amsterdam and the American findings does serve as a caution against both genetic explanations and explanations based solely on the American history of ethnic relationships. There may be something about being a double "outsider" in a culture–alienation resulting from being a minority group member and an IV drug user–that fosters parenteral drug use, the sharing of drug injection equipment, and the resultant spread of the AIDS virus. We need more cross-national studies of HIV infection among IV drug users to examine this possibility more fully.

SUMMARY OF POTENTIAL EXPLANATIONS

There is general consistency in the observed findings of ethnic differences in HIV seroprevalence rates between minority IV drug users, primarily nonwhites in the United States (and Germans in Holland) and non-Latino whites in the United States (and the native Dutch in Holland). In some of the studies, the differences are not statistically significant, but in none of the studies do ethnic majority IV drug users have significantly higher seroprevalence rates.

At present there is no satisfactory explanation for these ethnic differences. Genetic differences may be an explanation, though this would be difficult to apply to the European data. Difficulties in methodology, in controlling the precise definition of "sharing" injection equipment, or in reporting male-to-male sexual behavior may underlie the observed differences, but there is no definitive evidence that these methodological difficulties do explain the differences.

At least for New York City, the observed ethnic differences correspond with differences in the neighborhoods from which the subjects were recruited. Controlling for geographic areas within the city could possibly explain much of the observed ethnic differences in the city. This explanation then leads to the questions of why the AIDS virus appears either to have entered minority IV drug use areas before entering white IV drug use areas, or to have spread more rapidly within them after being introduced.

At present there is no satisfactory explanation of why the virus would have entered minority IV drug use areas before majority IV drug use areas. Further study of the dynamics of HIV transmission among IV drug users within individual cities and across cities may help provide answers to these questions. Studies of travel patterns and the open marketing of drugs in certain areas might also provide insight.

IMPLICATIONS FOR PREVENTION PROGRAMS

Given the rapidity with which HIV can spread through the sharing of drug injection equipment, a full-scale prevention effort directed toward this group is required to avert a major national crisis. AIDS prevention programs for IV drug users must be conducted *now*.

One potential mistaken interpretation of the ethnic difference data is that minority IV drug users are not capable of the same degree of AIDS risk reduction as white IV drug users. This point of view is in line with a general "social deprivation" hypothesis that implies reducing AIDS among minority IV drug users would be impossible prior to substantial progress on the many other problems facing minority communities.

This general social deprivation hypothesis is unduly pessimistic with respect to AIDS risk reduction among minority IV drug users. Our 1986 data from southern Manhattan methadone maintenance treatment program patients showed that 48 percent of black IV drug users had reduced sharing needles as compared to 26 percent of whites and 27 percent of Latinos ($p < .01$) (Friedman et al. 1987).

Thus, these data by no means support the social deficit hypothesis, nor do they support the view that IV drug users of any particular ethnic group are more likely than others to protect themselves. Regardless of the proper explanation for the differences in risk reduction among these IV drug users in southern Manhattan, these results indicate a substantial potential for AIDS risk reduction among minority IV drug users that can be addressed immediately. Undoubtedly many components of the social deprivation of minority communities will have to be addressed in order to reduce the excessive rates of IV drug use within those communities; and it is probable that substantial progress in improving the social situation of minorities would facilitate AIDS prevention among them. Nonetheless, with respect to AIDS prevention, there is much that can and must be done immediately to reduce the spread of HIV among both majority and minority IV drug users.

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3. HIV Seroprevalence: Racial Distribution Among Patients Attending a Sexually Transmitted Diseases Clinic

John W. Diggs, Ph.D.

Sexually transmitted diseases (STD) persist as a major public health problem. Large numbers of Americans continue to be afflicted with new or recurrent episodes of genital herpes, chlamydial infections, trichomoniasis, and gonorrhea. These infections often lead to pelvic inflammatory disease, resulting in numerous cases of damaged fetuses, infertile women, and billions of dollars in direct and indirect costs.

These sexually transmitted diseases represent a serious problem. AIDS, however, represents an even greater problem. The number of AIDS cases and deaths continues to mount at an alarming rate. There is no cure, and a vaccine is still some years away. Therefore, unless certain high-risk drug and sexual behaviors are drastically reduced, AIDS will likely go down as one of the major scourges in the history of humankind.

Based on May 1989 data from the Centers for Disease Control (CDC), there are more than 97,000 reported cases of AIDS in the United States alone, and there have been more than 56,000 deaths. The current AIDS cases represent only the tip of the iceberg. The numbers below the tip are somewhat less certain. There is disagreement in the estimates of how many individuals are infected with the human immunodeficiency virus (HIV), the causative agent of AIDS. CDC has estimated between 1.5 and 2 million asymptomatic carriers. Other sources claim these figures are exaggerated and suggest instead that estimates in the range of

650,000 are more realistic. In either case, the papers presented in this volume are extremely timely and, indeed, critical to the planning and development of strategies, particularly as they relate to minority communities.

Since the earliest cases of AIDS were recognized in 1981, many notable accomplishments have been made; however, there can be no doubt that unless present trends are reversed, the likely future consequences are frightening. The magnitude of this problem cannot be overstated.

For minority communities, the problem of AIDS is exceedingly tragic. The disproportionate representation of blacks and Hispanics among people with AIDS is alarming. The obvious catastrophic consequences that will result from not doing more dictate that new strategies be developed in the national fight against AIDS.

HIV SEROPREVALENCE AMONG CLIENTS ATTENDING A STD CLINIC IN BALTIMORE

Screening for HIV infection has been recommended as one method to assess the present impact of HIV infection and the potential spread in certain populations. This discussion focuses on a recent study of HIV seroprevalence in a study population drawn from an inner-city STD clinic in Baltimore, Maryland.[1] The discussion is limited to trends rather than the extensive presentation of raw data.

The study was conducted between February 2 and April 30, 1987. The investigators anonymously screened approximately 4,000 patients. All new patients were asked to complete a self-administered anonymous questionnaire about selected characteristics such as history of STDs and risk behavior. The questions were written in such a way that they could be answered by a simple yes or no response or, in the case of age and sex, with a numerical response.

The questionnaire was validated prior to and during the study period by comparing the demographic and risk factor information for the self-administered questionnaire to data collected during 20-minute interviews by experienced STD interviewers at the same STD clinics. No significant differences were present for any of the pertinent information for the 4,000 patients when compared to the same data elicited from 896 age- and sex-matched patients attending the same STD clinics.

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[1]The study was conducted under the direction of Dr. Thomas Quinn with collaboration by Drs. David Glaser, Anthony Fauci, Edward Hook, and others. Work was done under the aegis of the National Institute of Allergy and Infectious Diseases, Johns Hopkins University, The Baltimore City Health Department, and the Maryland Department of Health and Mental Hygiene.

Excess serum from blood obtained routinely for syphilis serology from over 4,000 consecutive patients attending the clinic was analyzed for presence of HIV antibodies. Through a sequential numbering system without patient identifiers, results could be matched to a patient's questionnaire while preserving patient anonymity.

Printed materials regarding HIV testing were distributed to all STD patients, and patients were encouraged to seek testing and counseling.

Patient Characteristics

Selected characteristics in patients attending the Baltimore City STD clinic are summarized below and in table 1.

- Of the 4,911 consecutive patients visiting the STD clinics who had sera obtained, 5.2 percent (256) were seropositive for HIV.
- Completed or partially completed questionnaires were available for 82

Table 1.—Selected characteristics in patients attending Baltimore City STD clinics

Feature	Men	Women
Demographics		
Sex	68%	32%
Median age	24	21
Age range	13-74	10-72
Race: White	5%	5%
Black	94%	94%
Other	1%	1%
High-risk behaviors		
Homosexual/bisexual	7%	--
IV drug use	9%	5%
Sex w/IVDU bisexual	12%	13%
Sex w/prostitute	11%	--
Blood transfusion	2%	4%
History of Other STDs		
Syphilis	10%	9%
Gonorrhea	49%	42%
Herpes	2%	2%
Genital warts	4%	5%

percent (4,028) of these patients. Of these, 5.2 percent were HIV antibody positive.

- The 5.2 percent HIV seroprevalence in the evaluable population was not different from the 5.2 percent HIV seroprevalence in the total population; or the 5.3 percent HIV seroprevalence in the nonevaluable patient group who failed to complete a questionnaire.
- Two-thirds of the study population were men and one-third were women.
- Ninety-four percent of the study population were black, 5 percent were white, and 1 percent were from other ethnic groups.
- The median age for women was 21, with a range from 10 to 72.
- The median age for men was 24, with a range from 13 to 74.

While self-reported history of STDs was common in both men and women, results of the survey also revealed:

- a history of gonorrhea in 49 percent of men and 42 percent of women
- a history of prior treatment for syphilis in 10 percent of men and 9 percent of women
- a history of herpes of 2 percent in both men and women
- genital warts in 4 percent of the men and 5 percent of the women

The results suggest an association in males between HIV seroprevalence and increasing age. Seroprevalence increased from 2 percent in the 15 to 19 age group to 11.4 percent in the over 30 category. The situation as related to age was not as dramatic in female patients.

High-Risk Behaviors for HIV Infection in Male and Female Patients

Approximately 24 percent of the men in the study acknowledged a history of high-risk behavior; 7 percent had a history of more than one high-risk behavior.

- Homosexuality or bisexuality was acknowledged in 7 percent.
- Parenteral drug use was acknowledged in 9 percent.
- Heterosexual exposure to an IV drug user was acknowledged in 12 percent.
- Sex with a prostitute was acknowledged in 11 percent.
- While not considered a high risk behavior as such, there was some history of blood transfusion in 2 percent.

High-risk behavior was acknowledged in 15 percent of the women; 4 percent had multiple risk behaviors.

- Parenteral drug use was practiced by 5 percent.
- Heterosexual exposure to a bisexual man or IV drug user was 13 percent.
- History of blood transfusions was 4 percent.

HIV IN ASSOCIATION WITH OTHER STDS

In men, the presence of antibody to HIV was significantly associated with a past history of syphilis (21 percent), herpes (14 percent), and genital warts (15 percent) (see table 2). The association between HIV seroprevalence and gonorrhea, while present, was less dramatic. (This suggests that sexually transmitted diseases that disrupt the epithelium may increase the efficiency of HIV transmission.)

These findings are similar to observations made of HIV infection among prostitutes attending STD clinics in some parts of Africa. In those studies, a history of syphilis or a history of previous genital ulceration were associated with HIV seropositivity.

In women, a history of genital warts or herpes was significantly associated with an elevated seroprevalence rate to HIV–9 percent in both categories as compared to 3 percent of those with no history. The differences in seroprevalence rates in women with or without a history of syphilis or gonorrhea are not as great (see table 3).

HIV SEROPREVALENCE IN WOMEN WITH HIGH-RISK BEHAVIORS

HIV seroprevalence was significantly higher among women who acknowledged parenteral drug use (22 percent) compared with those who had not used drugs parenterally (2 percent). See table 3.

HIV antibody prevalence was also greater in women who acknowledged having sexual relations with a male IV user or bisexual man (11 percent) as compared to 2 percent among those who did not.

NUMBER OF SEXUAL CONTACTS

Results suggest that HIV is less likely to be transmitted during a single contact than other sexually transmitted diseases. For example, the transmission of

Table 2.–HIV infection in male patients attending Baltimore City STD clinics

History	Seropositive to HIV	
	Percent variable present	Percent variable absent
High-risk behaviors		
Homosexual/bisexual	35	4
IV drug user	15	5
Sex partner IVDU	12	3
Sex with prostitute	6	6
Other STDs		
Syphilis	21	5
Gonorrhea	7	5
Herpes	14	6
Genital warts	15	6

Table 3.–HIV infection in female patients attending Baltimore City STD clinics

History	Seropositive to HIV	
	Percent variable present	Percent variable absent
High-risk behaviors		
IV drug user	22	2
Sex partner IVDU/ bisexual man	11	2
Blood transfusion	2	3
Other STDs		
Syphilis	5	3
Gonorrhea	4	3
Herpes	9	3
Genital warts	9	3

gonorrhea is estimated at 25 percent after a single exposure of a man to an infected woman, and at 50 percent for a woman whose male partner is infected.

While HIV is transmissible from men to women and from women to men, available evidence suggests that the risk of transmission from a single sexual exposure may not be very high.

DISCUSSION

The results of this study should be viewed strictly in terms of the study population. A 5.2 percent HIV seroprevalence rate in any setting is quite alarming, but because this study population was drawn entirely from patients of an inner city STD clinic, one may not generalize these findings to the population at large. Similar conclusions, but for opposite reasons, could possibly be drawn from the low prevalence of HIV antibody among civilian applicants for military service as reported by Donald Burke in the *New England Journal of Medicine*. Burke et al. found the national mean prevalence for civilian military applicants to be 1.5 per 1,000. Burke attributed his finding to the fact that two high risk groups–IV drug abusers and active homosexuals–are probably underrepresented among applicants for military service. On the other hand, unemployment and other adverse economic conditions may contribute to the socially disadvantaged populations who engage in high-risk behaviors as the primary attendees in inner city STD clinics.

HIV seroprevalence rates are higher in densely populated urbanized areas, where blacks and Hispanics are disproportionately represented. But HIV transmission is occurring throughout the United States. The important consideration may not be so much that there are high risk *groups* living in the inner city. Rather, the important consideration may be that transmission is being accelerated because of high-risk *behaviors*.

Regardless of the specter raised by AIDS, high-risk sexual behaviors and attitudes do not appear to be changing significantly in many urban populations. This is a cause for some concern. Unless present trends are reversed or unless a vaccine or a cure for AIDS is in the very near future, we could be facing a disaster of unprecedented proportions.

For the present, medical diagnosis and treatment will have limited success in curbing the spread of AIDS. Accordingly, culturally relevant education and social and behavioral research are needed. These activities should include surveillance and analyses of behavioral risk factors and studies of behavioral modification for primary prevention. For purposes of improved public health, information is needed in the distribution of selected sexual behavior risk factors nationwide among all sexually active age groups in all populations. This will

allow estimates of numbers of cases and related complications and permit targeting of behavioral prevention efforts. Collecting such data over time will permit monitoring of the success of behavioral prevention efforts within specific subgroups of the target populations.

Behavior modification is a principal goal of the vastly expanded health information/education programs recommended by the Institute of Medicine for responding to the AIDS epidemic. Many strategies and techniques derived from current conceptual models of behavior modification may be useful to help increase prophylactic use of condoms, to help decrease certain high-risk sexual behaviors, and in the case of IV drug abusers, to practice hygienic injection procedures or to seek abstinence through drug treatment programs.

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II. IMPACT ON SPECIFIC POPULATIONS

4. The Minority A.I.D.S. Project: Dealing With AIDS in a Black Community in Los Angeles

Rev. Carl Bean

EDUCATING A BLACK COMMUNITY ABOUT AIDS

It is impossible to speak to the problem of AIDS in urban black communities and not address the issue of poverty. Since the establishment of the Minority A.I.D.S. Project in Los Angeles in 1985, the most pressing needs of our clients have always been related to day-to-day survival. Most of our Afro-American clients are young, have very little work history and, therefore, do not have insurance coverage, which means they are diagnosed and treated at public medical facilities such as our local county hospital. Most of these people, who live at or below poverty level, are not familiar with preventive medicine. Most of our clients receive their diagnosis of AIDS while being seen in an emergency room for what they believe to be other medical problems. The client is usually then admitted to the facility and is very often at that point abandoned by family and friends.

In order to combat the AIDS crisis in the black community, it is imperative that very clear and easily understood educational messages be used. Most pamphlets and brochures should be at a reading level of fourth grade or lower. It has been our experience that because of the high incidence of illiteracy in our communities, there are many persons who are likely to only receive information about AIDS via television, radio, records, tapes, and illustrated drawings.

These educational materials must not be too wordy, should contain drawings of black people, and should employ street language so as to reach all those in our communities. To show the importance of receiving this education, statistical data demonstrating the disproportionate numbers affected in the black community should be employed, e.g., 52 percent of all the women with AIDS in America are black. Following close behind should be data on black babies affected by the virus and most important of all, how to prevent the spread of the AIDS virus among black women, infants, and children.

When trying to reach youths in the black community, graphics and art work demonstrating the popular trends in culture should be employed. Our most successful pamphlet for teenagers opens with a drawing of break dancers having a fun time, and the message is "break away from AIDS." We have prepared public service announcements for local television, radio, and the print media and find them to be very successful in reaching youths in Los Angeles.

We have also discovered that workshops, seminars, and conferences are not the best vehicles to reach those persons with little formal education. The message must be taken to the people by those persons who are trusted in their own community. To educate prostitutes we must use persons trusted by the community of prostitutes, and to educate those in the intravenous drug abuse community we must use persons trusted by that community.

Peer group individuals will be most effective in causing behavioral change. However, in most cases they will not be highly educated, but they will be sincere people who have lived through the experience and when trained will get the job done. It is imperative that they be paid for their work, as they usually cannot afford to simply volunteer their services.

Each educational effort must contain positions for street outreach. The outreach worker must have an excellent knowledge of referral resources. We have found that the best way to equip an outreach worker to do referrals is to take the time to walk them through each referral facility, thereby allowing them to know firsthand what is available.

We also send health educators out to the elementary, junior, and senior high schools. Accompanying our health educators to help bring the message home, we frequently also send persons with AIDS to share their personal experiences. Persons with AIDS talking directly to youths breaks through the barriers and causes a healthy and exciting exchange within the school setting.

AIDS AND THE BLACK CHURCH

Religious institutions in black communities tend to be very conservative or fundamentalist in doctrine, thereby having the belief that those stricken with

AIDS have received their just reward for having lived in sin. This can present a serious barrier to the promotion of AIDS education and services. However, in Los Angeles we have found that the way to tear down such barriers in black churches is to discuss AIDS in the context of God's concern for the sick and suffering.

The black church is the strongest organization in our community and has great influence over the issues people will get involved in. There are progressive black clergy and congregations whose theology is liberating and empowering for all persons within the community. Most of these persons can be found in organizations within the church community that cross denominational lines, i.e., in Los Angeles the Interdenominational Ministerial Alliance. We have been supported by progressive churches through food baskets, monetary donations, volunteer social service committees, and hospital visitations. Major black churches in our community have opened their doors for AIDS seminars and conferences that have been very successful and well attended. It is our hope that in the near future we will have an AIDS clearinghouse set up for laypeople and pastoral persons throughout the United States.

BLACK GAYS AND AIDS

In black communities, there are no organized gay communities such as can be found in the Castro area in San Francisco, West Hollywood in Los Angeles, or Greenwich Village in New York. Most black gays live in the main black community and sometimes still within the family home due to financial circumstances. Gay is something most often regarded as seen but not spoken about.

There is a real misconception among blacks that homosexuality is a white phenomenon. We have discovered that this is not so much truly believed but rather is a form of denial. However, the greatest number of AIDS cases in the black community across America are still within the homosexual/bisexual community.

Because of the lack of organization and the denial, it is imperative that educational approaches be developed to appeal to the overall black community. Most cities and states throughout the country do not have designated black gay bars; therefore, closeted black gays frequent straight establishments. In order to reach these closeted black gays, materials must appeal to all those in attendance at these establishments. The easiest appeal is to target the black family.

IVDUS AND AIDS IN THE BLACK COMMUNITY

The most denied group of persons in the black community are the intravenous drug users. This is the hardest group to reach as they have no organized power

base and can be found in every peer group in the community. They are forced to go underground and become nameless and faceless while practicing intravenous drug use. Most intravenous drug users cannot work and must steal to feed their habits. Major fears of theft and murder from this group exist in the community, as these persons are thought of as without morals or remorse. In fact, many of the murders and robberies that take place in our communities today are drug related.

It cannot be overlooked that most of these persons are oppressed and believe that there is no place for them in American society. We must have complete rehabilitation programs in existence across America in order to complete the job of AIDS education in and among the intravenous drug using population. It is not enough to tell a person not to share needles or how to clean them and not offer a way out of the addiction itself.

We also must reach the sex partners of intravenous drug users as they are at high risk for contracting the AIDS virus as well. This is also a hard group to reach as women who are sex partners of intravenous drug users are not likely to admit it because they feel they are sharing their personal intimacies outside their relationship. It must be remembered that just as the picture of the white picket fence and roses in middle America denote the successful and happy family, so does the mate, usually referred to as "my man," hold the same place of importance in the mind of many female sex partners of intravenous drug users. If this person does not wish to use a condom during sexual practices, it is highly unlikely that the female partner will insist to the point of refusal and thereby lose the sexual gratification and support of her mate.

It is essential that along with the general AIDS education, self-love be taught and care demonstrated by the message provider. We have discovered that once it is recognized by the intravenous drug user that a person is present because that person cares and wishes to save lives, there is a willingness to be more open to the educational message.

Intravenous drug users who are in treatment programs are much easier to educate, as they can be identified; however, it is extremely important that we continue to develop ways of educating those outside treatment programs.

THE MINORITY A.I.D.S. PROJECT'S DIGNITY HOUSE

The Minority A.I.D.S. Project currently is operating Dignity House in a black community of Los Angeles. This program has been in operation for 1-1/2 years and has served 25 people with AIDS to date. Because of the high percentage of homeless people with AIDS in the black community, it is necessary that this service be provided. We receive anywhere from two to five referrals weekly of

homeless people with AIDS from the black community. We have not had problems placing gay/bisexual men and heterosexual men within the same facility and in many instances, sharing rooms.

We try to provide the atmosphere of a home as opposed to a hospice. We do not use hospital beds but instead use regular twin beds for the home with bright and lively bed linens. We also provide a washer and dryer within the home setting.

There is a community living and dining area, also a community kitchen and spacious backyard. Each room is equipped with TV and radio, and there is a large selection of reading materials. In the community living area there is a VCR and color television where movies can be enjoyed by the entire household. There is a well-stocked pantry and freezer. A microwave oven is also present for those times when clients do not feel up to preparing a full meal. The rooms are equipped with separate heaters with thermostats so that they can be individually regulated.

There is such a demand for housing that we plan to open our second facility, Dignity House for Women and Children, in the near future. When we are filled, we provide monetary grants to those who are able to maintain their own apartments or those living in apartment hotels. We provide monetary grants to pay gas, lights, and telephone bills and we advance monetary grants for groceries and clothing. We also assist families with burial expenses.

One of our greatest sources of support for persons with AIDS is the one-to-one buddy program that utilizes trained volunteers. The volunteers provide emotional support, arrange transportation, attend social functions with clients, etc.

Our work has now been recognized throughout America and is influencing other church and social groups in the black community to begin to develop AIDS programs of their own. We have the support of the Southern Christian Leadership Conference, the National Association for the Advancement of Colored People, the Urban League, the Brotherhood Crusade, the Links of America, the National Black Nurses, and other national organizations within the black community.

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5. AIDS Prevention Directed at Hispanic Youths and Families in Large American Cities

Hilda Crespo

ASPIRA was founded in 1961 by a group of concerned community leaders and professionals in New York City who met to discuss the alarming dropout rate of Hispanic students and the social and economic conditions of the Puerto Rican community. ASPIRA is dedicated to encouraging and promoting educational achievement and leadership development among Latino youths.

In the past 28 years, ASPIRA has expanded beyond the original office in New York City to open associate offices in New Jersey, Pennsylvania, Illinois, Florida, and Puerto Rico. ASPIRA's programs currently assist an average of 14,000 youths annually, including the placement of over 3,000 young Latinos in postsecondary educational institutions each year.

AIDS is a rapidly growing national problem and will become even more acute given the significant increase in the number of AIDS cases among IV drug users. We stand at the beginning of a long and tortuous road in dealing with this crisis in minority communities. Data from the Centers for Disease Control (CDC) indicate that at the national and local levels blacks and Hispanics are grossly overrepresented as AIDS victims. The incidence of AIDS among blacks and Hispanics is at least twice that of whites. As stated in other papers in this volume, 24 percent of the reported AIDS cases in the United States are black and 14 percent are Hispanic. These figures are even higher for minority women and children. More than 70 percent of women with AIDS are minority, as are 80 percent of children with the disease (CDC 1987).

This chapter focuses on two aspects of the problem:

- issues associated with educational approaches to stop the spread of the disease among Hispanics
- ASPIRA's efforts in addressing the AIDS epidemic

EDUCATING HISPANIC COMMUNITIES ABOUT AIDS

Low educational attainment levels combined with poverty and lack of access to adequate health care place Hispanics in an unfortunate position to deal with the AIDS issue. This point is borne out by demographic statistics on Hispanic groups:

- According to the Bureau of the Census, 1987 Current Population Report, in March 1987 there were 18.8 million Hispanics in the civilian noninstitutional population. This represents approximately 8 percent of the total U.S. population.
- The proportion of Hispanics 25 years old and over who had completed 4 or more years of college in 1987 was 9 percent, as compared to 21 percent for non-Hispanics.
- In 1986, the median earnings of Hispanics was 61 percent of the median earnings of non-Hispanics.
- In 1986, 1.1 million Hispanic families were living below the poverty level; 49 percent of these were maintained by a woman with no husband present.
- One-fifth of all Hispanic adults are medically disadvantaged (Villareal 1985). They lack adequate access to health services because of poor or no health insurance and no regular source of medical care.
- In 1982, Hispanics accounted for 20 percent of all births to mothers age 19 or younger (Ventura 1985).

In large urban areas around the country such as New York, Los Angeles, Newark, Miami, Houston, Chicago, and Philadelphia, the pattern is intensified. ASPIRA has found high school dropout rates in these communities for target groups of youths to be as high as 50 to 80 percent (Colitri 1983; Kyle 1984).

There are also large concentrations of black and Hispanic IV drug users at these locations. In Hispanic communities, the high teenage pregnancy rate combined with the high incidence of intravenous drug users may lead to the rapid spread of the disease (NHFADA 1987).

Given these factors, there are several issues in the Hispanic community that

need to be considered. In looking at the drug problem, we cannot effectively deal with AIDS as an outcome of IV drug use until we deal with the use of IV drugs in the Hispanic community. Although some educational programs have been developed that are aimed at intravenous drug users, reaching this population with information and persuading them to change their behavior is going to be very difficult. We need to examine the effectiveness of current programs developed to counteract IV drug use in the Hispanic community. We need to determine how to effectively get IV drug users to change their behavior. We also need to look at how we keep IV drug users from spreading the disease to non-drug users. And we need to make the sexual partners of IV drug users aware of the danger to themselves and their offspring.

In the absence of a vaccine, prevention and control of infection will depend largely on effective educational approaches. In working with youths in Hispanic communities, prevention strategies must take into account cultural and religious factors. Many Hispanic youths, for example, do not feel they can get AIDS.

Religious institutions within the Hispanic community have been reticent in responding to the AIDS issue. Moral considerations have also posed further complexities in the education efforts within the Catholic Church and other religious denominations. In effectively reaching the Hispanic community, however, formal and informal institutions such as the family, church, student groups, educational agencies, and community organizations need to be utilized.

The leadership in communities must also to be tapped. Credible individuals such as health providers and professionals working in the community need to be involved in providing education to Hispanic youths. There is a great need to focus on capacity building by providing training and education to organizations serving Hispanic communities. These organizations are generally close to and are highly regarded in the Hispanic community and need to take a stronger role in delivering the message.

ASPIRA'S EFFORTS IN DEALING WITH THE PROBLEM

ASPIRA has used several approaches in dealing with the AIDS crisis. ASPIRA of Florida, for example, held a forum on AIDS for Hispanic parents. ASPIRA of Pennsylvania provides a representative to serve on the Philadelphia Mayor's Task Force on AIDS and has held a conference for Hispanic youths dealing with AIDS. ASPIRA of New Jersey has included discussion of the AIDS issue in one of their major educational conferences for youths. ASPIRA of New York held an information forum on AIDS for Hispanic youths and works in cooperation with other agencies dealing with the crisis. ASPIRA of Illinois had a health service provider conduct a workshop for students on AIDS. Furthermore, the

ASPIRA Association national office is in the process of developing a leadership forum on AIDS that will bring together board members, ASPIRA staff, and student leaders. Through these and other efforts, we hope to develop an Association-wide agenda for dealing with the AIDS issue.

Working in isolation, community-based organizations often do not have the financial and human resources necessary for the development and implementation of community education programs. Through cooperative efforts it is possible that some of the hardest hit communities can develop programs that will have a positive impact.

CONCLUSION

What we are witnessing today is but a fraction of what the AIDS crisis holds for us in the future. The disease is already present among many of our youths. Action must be taken now to prevent further spread of the disease. The Hispanic community and society as a whole cannot afford the loss of these valuable human resources. The following are some of our recommendations on areas that need to be emphasized in addressing the AIDS issue:

- Federal and State officials must channel resources to those community organizations that can make a difference.
- Health officials must work closely with community groups to minimize language and cultural differences.
- Hispanics must be included in the decisionmaking bodies addressing the crisis, so that community needs are met.
- Resources need to be made available for the development of additional treatment facilities for IV drug users in the Hispanic community.
- Greater efforts are needed to encourage IV drug users to enter treatment centers.
- The number of treatment centers in the Hispanic communities needs to increase.
- The use of TV, print media, and radio needs to be maximized in the educational process and public service announcements need to feature Hispanic personalities. Materials need to be developed in English and Spanish to help health care personnel and others in the community in counseling individuals and their families.
- Volunteerism in the Hispanic community needs to be developed more to assist in the overall effort.

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6. AIDS Prevalence in U.S. Asian and Pacific Islander Populations

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This chapter examines the current data regarding the prevalence of the HIV virus and AIDS in Asian and Pacific Islander populations in the United States. Three cities are discussed: New York, Los Angeles, and San Francisco. These cities were chosen because of their large Asian populations and their considerable AIDS mortality figures. Hypotheses are offered regarding the currently small numbers of reported Asian AIDS cases, and brief recommendations for action are made.

CURRENT INCIDENCE RATES

As is true with all population groups in America—black, white, red, or brown—Asians are dying of AIDS. As of November 23, 1987, the number of reported cases of Asians with AIDS was 274 of the 46,340 total U.S. cases (CDC 1987). While Asians make up approximately 2 percent of the total U.S. population, the 274 reported cases represent just 0.6 percent of the total adult/adolescent AIDS cases in this country.

Unfortunately, the relatively small numbers have resulted in virtual data obscurity for Asians, with important information usually lumped into the "other" categories noted in most documents with multiple asterisks. The small

Research for this paper was supported in part by National Institute on Drug Abuse training grant T32 DA07209.

numbers have also created a false sense of security in both the Asian communities and in government officials responsible for health care interventions and monitoring. This perception of Asians as being somehow less affected by AIDS has resulted in the forestalling of timely and critical action.

In 1987, Asians were 4 percent of the New York City population[1], and 0.5 percent of the total AIDS cases in the city (see table 1). Of the 11,939 total reported, 62 were classified as Asian or Pacific Islander. Homosexual/bisexual Asians constituted a majority of the cases (77 percent), while IV drug use was implicated in only three instances (5 percent). No information is available at this time on 11 of the 62 cases (18 percent).

As of November 30, 1987, Asians in Los Angeles County constituted approximately 8 percent of the population and 1 percent of the total AIDS cases in the city, with 40 of 3,847 reported AIDS cases classified as Asian or Pacific Islander (see table 2). Homosexual/bisexual behavior constituted the largest category of possible AIDS transmission modes (73 percent), with IV drug use implicated as a risk factor in only one individual who also reported homosexual/bisexual behavior as a risk factor. The remaining cases were attributed to transmission via contaminated blood products (25 percent).

In San Francisco, 65 of the 3,955 reported AIDS cases were Asian or Pacific Islander (1.6 percent). This compares to 3,347 AIDS cases among whites (84.6 percent), 252 cases among blacks (6.4 percent), 287 cases among Hispanics (7.3 percent), and 4 Native American AIDS cases (0.1 percent) (see table 3).

Breaking down the numbers further by race and risk group (table 4), 56 of the 65 (86.2 percent) Asian AIDS cases involved homosexual/bisexual behavior as the only identified risk factor. This constitutes the same percentage of individuals in this category as in Hispanic populations (86.1 percent). In all, Asians/Pacific Islanders made up 1.7 percent of the total cases attributed to homosexual/bisexual behavior.

Intravenous drug use alone was implicated in 2 of 65 (3.1 percent) Asian AIDS cases. This compares with 25 of 252 (9.9 percent) IVDU-only cases in the black population, 9 of 287 (3.1 percent) IVDU-only cases in the Hispanic population, and 14 of 3,347 (0.4 percent) IVDU-only cases in the white population. The numbers, however, are subject to interpretation in that they represent a cumulative total and are greatly influenced by factors such as time of viral introduction and mode of viral infection transmission into the various subgroups.

[1]Population estimate derived from 1980 U.S. Bureau of Census figures.

Table 1.—Asians with AIDS in New York City

Homosexual/bisexual	48
I.V. drug users	3
Information not available	11
Total	62[a]

[a]0.5% of 11,939 total AIDS cases

Source: New York City Health Department, AIDS Surveillance Office, October 28, 1987.

Table 2.—Asians with AIDS in Los Angeles County

Homosexual/bisexual	29
I.V. drug abusers	0
Homo-/bisexual IVDU	1
Hemophilia	1
Transfusion	9
Total	40[a]

[a]1% of 3,847 total AIDS cases

Source: Los Angeles County Health Department, AIDS Surveillance Office, November 30, 1987.

Table 3.—AIDS cases in San Francisco by race

Race	Number
White	3,347
Black	252
Hispanic	287
Asian/Pacific Islander	65
Native American	4
Total	3,955

Source: San Francisco AIDS Surveillance Office, October 31, 1987.

Table 4.–AIDS patients in San Francisco: Race by risk group

	White	Black	Hispanic	Asian/Pacific Islander
Homo/bisexual	2,865	169	247	56
Homo/bisexual IVDU	419	38	21	2
IV drug user	14	25	9	2
Heterosexual	9	7	1	0
Transfusion	22	4	2	5
Hemophilia	5	0	1	0
Other	13	9	6	0
Total	3,347	252	287	65

Source: San Francisco AIDS Surveillance Office, October 31, 1987.

Table 5.–Asian/Pacific Islander AIDS cases by ethnic group in San Francisco

	Percent of Population	Number of Cases
Chinese	12.1	15
Filipino	5.6	28
Japanese	1.8	16
Vietnamese	0.8	2
Pacific Islander	n.a.	3
Other	n.a.	1

Source: San Francisco AIDS Surveillance Office, October 31, 1987.

Another factor to consider when examining data in the Asian/Pacific Islander category is the tremendous heterogeneity of this population. As many as 32 distinct Asian ethnic groups have been identified in the San Francisco area, involving distinct languages, traditions, and behaviors. Table 5 provides a breakdown of the Asian/Pacific Islander category by ethnic groups, with city population estimates also provided.

As is apparent in this table, some populations are overrepresented in terms of their number of AIDS cases versus population percentage. Filipinos, for

example, are outnumbered by the Chinese population by better than a 2 to 1 margin, yet they account for nearly twice as many AIDS cases. Japanese are outnumbered by a more than 6 to 1 margin by the Chinese, yet there are a nearly equal number of AIDS cases in each population.

Clearly, some Asian ethnic groups are at greater risk than others (San Francisco Department of Public Health 1987). Factors that might account for this disparity would appear to be worthy of investigation. It has been suggested, for example, that the greater number of AIDS cases in the Filipino community is due to their considerable genetic and sociobehavioral overlap with the Hispanic population. This overlap could provide transmission routes into this community not found in other Asian subgroups. Unfortunately, little data are available to do more than speculate.

HYPOTHESES REGARDING CURRENT LOW INCIDENCE RATES

There are a number of alternative explanations for the current low AIDS incidence rates among Asians including:

- insular communities
- underreporting
- behavioral differences
- genetic differences
- later time of viral introduction

Insular Communities

Asian communities in the United States tend to be extremely insular. In largely urban areas, they often exist as highly identifiable entities where other ethnic groups go only when desiring a semiexotic meal. The general sociobehavioral isolation of Asian subgroups is not necessarily always a strictly voluntary one. While Asians often prefer to stay within the enclaves of their own family-oriented and highly structured societies, they are often helped into this isolation by other ethnic groups who tend to shun them. Asian homosexuals, for example, have been described as existing outside the general gay community due to their ethnicity and inability to meet the stereotypic "beautiful people" profile (San Francisco Department of Public Health 1987). This social isolation would, however, have the fortunate side effect of limiting some of the possible avenues of viral introduction into the Asian communities.

Underreporting

The problem of underreporting is admittedly not unique to Asian communities. There are, however, some cultural factors that might account for greater underreporting than evidenced in other groups. Among many Asians, discussions of sexual issues are greatly inhibited, and discussions of terminal illness may be believed to result in its occurrence (San Francisco Department of Public Health 1987). Such considerations, along with the strong and prevalent concept of shame or loss of face, might result in community physicians avoiding diagnosing a patient as having AIDS. Extreme cultural pressures might also result in suicide attempts or suspicious deaths in the Asian community as an alternative to such a diagnosis.

Underreporting might also be expected to occur on other levels. The numbers received by public health departments and the CDC are through the established and more traditional health care channels. It is possible that many Asians might not access the same health care resources as other ethnic populations. While there are little data regarding this possibility, such health care alternatives as acupuncture and herbal medicines are often sought.

The manner in which AIDS study samples are developed may also influence the overall picture. A recent seroprevalence study by Samuel and Winkelstein (1987), for example, reported a 27 percent HIV seropositivity rate in the 11 Asians tested in their cohort of 800 homosexual/bisexual men. The San Francisco-based sampling was said to be based on an "area probability" distribution, but the underrepresentation of Asians would appear to be relatively extreme. The study took place in a city in which over 20 percent of the population is Asian, and Asians are thought to account for as much as 10 percent of the San Francisco gay population, yet 11 of 800 is a representation of only 1.4 percent.

Behavioral Differences

AIDS is a disease that is transmitted through participation in specific high-risk behaviors that allow for viral transmission such as IV needle sharing or sexual activity with an infected partner. Little data are available regarding the specifics of sexual behaviors in U.S. Asian communities, but there are some clues. The prevalence of sexually transmitted diseases such as gonorrhea and syphilis in Los Angeles Asian communities, for example, is said to be 0.4 percent and less than 1 percent, respectively, of the total number of cases.[2] In San Francisco, approximately 1.1 percent of rectal gonorrhea cases reported in 1981 and 2.1 percent of the rectal gonorrhea cases reported in 1983 were said to be attributed

[2]Los Angeles County Health Department, Office of Sexually Transmitted Diseases, 1987.

to minorities in the "other" category.[3] Asians/Pacific Islanders make up approximately 80 percent of this category.

Little is known of the IV drug use problem in Asian communities except that there are not many Asians in drug treatment programs. In New York City, only 33 of the 36,365 or 0.1 percent of the total drug treatment slots are utilized by Asians/Pacific Islanders.[4] While these numbers may not be an accurate reflection of Asian drug use, it would appear that the low involvement of Asians in the IV drug use mainstream is one possible explanation for the low rate of infection.

This does not mean, however, that IV drug use does not exist. As noted above, Asians do not always access the traditional services, and may not utilize drug treatment programs for a variety of reasons. The experience of Asian American Recovery Services, Inc., in San Francisco for example, is that if an Asian-run agency is established in an Asian community, it is suddenly discovered that there are Asian drug addicts–many of them IV drug users.

Genetic Differences

There is little or no evidence to suggest that the currently low incidence rates among Asians are due to genetic factors. On the contrary, an examination of AIDS cases related to transfusions or blood products would appear to support the hypothesis that Asians are equally susceptible to infection. The transfusion/blood components category is the only risk factor group that might be expected to reflect a similar time of introduction, a degree of racial blindness, and a common behavioral pattern across ethnic boundaries.

Table 6 presents national transfusion-related AIDS cases by racial/ethnic group and national population estimate. The numbers from San Francisco indicate that Asians accounted for 15.2 percent of the total transfusion-related cases and 21 percent of the total population, while in Los Angeles county they account for 10.6 percent and 8 percent respectively. Nationally, the "other" category accounted for 2.8 percent of the transfusion/blood products category and approximately 2.2 percent of the total population.

Later Time of Viral Introduction

Another possible explanation for the currently low incidence rates is a later time of viral introduction into the Asian communities. The above-mentioned cultural/behavioral insulation from other subgroups may have served to retard the process of community infection. Unfortunately, this cultural/behavioral

[3]San Francisco Department of Health, Office of Sexually Transmitted Diseases, 1987.
[4]Division of Substance Abuse Services, State of New York, 1987.

Table 6.–Comparison of national population estimates and transfusion related AIDS cases by racial/ethnic group

	Number of Cases[a]	Percent	Population Est. In Thousands[b]	Percent of Population
White	784	75.5	153,730	80.6
Black	155	14.9	20,430	10.7
Hispanic	71	6.8	12,450	6.5
Other	29	2.8	4,180	2.2

[a]**Source:** Centers for Disease Control, November 1987.
[b]**Source:** National Institute on Drug Abuse, *National Household Survey on Drug Abuse*. 1985 population estimates.

isolation might also serve to accelerate the spread of the disease once it penetrates these tightly knit communities. The insularity might make intervention by traditional health care resources a difficult undertaking as language and cultural differences may serve as formidable barriers to effective intervention.

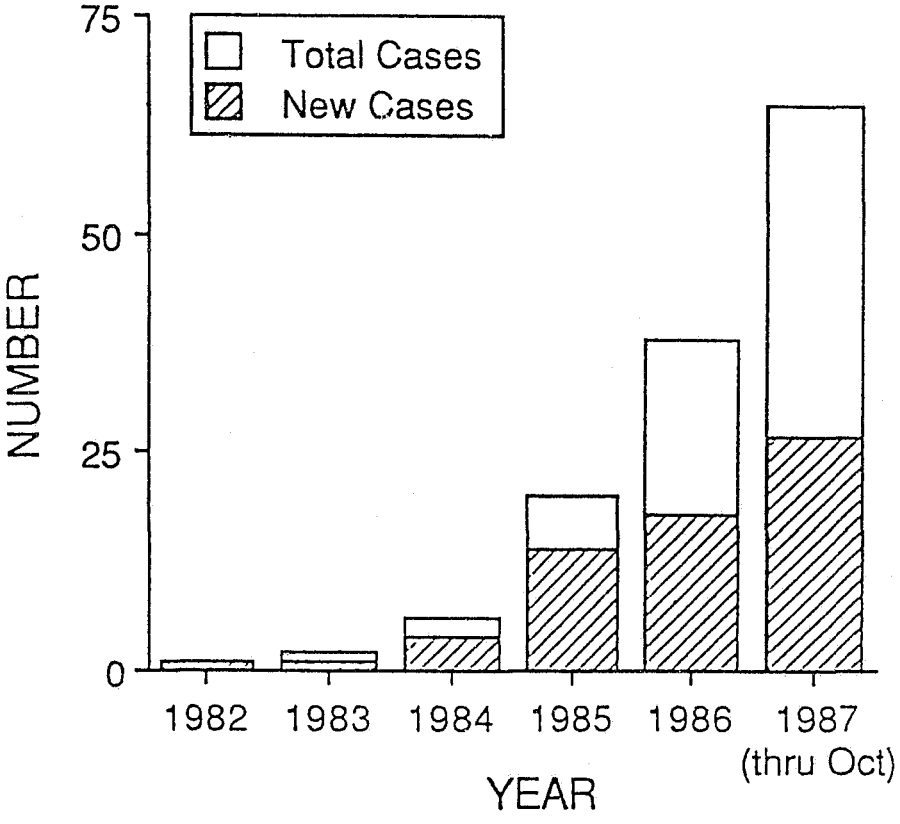
DISCUSSION

There is no doubt that the Asian community is fortunate to have experienced the relatively low infection and mortality rates to date. The problem, however, is the complacency such numbers may falsely engender in both the Asian communities and the government agencies assigned the task of safeguarding their health. Figure 1 illustrates the reason for concern as it shows the number of Asian AIDS cases in San Francisco is accelerating annually.

At present, there is a great need to improve the collection, reporting, and availability of Asian and other minority statistics. The lack of an adequate data base prevents the formulation of effective interventions in minority communities with respect to this deadly virus. It also allows the Asian communities to continue in their comfortable ignorance of the dangers, and it prevents communicating the need for necessary changes in behavior.

If it should turn out that the current numbers are reflective of an enduring low incidence rate, then the Asian community might serve as a useful comparison group with respect to sociobehavioral factors that are effective in preventing the rampant spread of AIDS. That possibility in itself should justify a further examination of the Asian AIDS picture.

Figure 1. Cumulative number of Asian AIDS cases in San Francisco since the first diagnosed case in 1982 through October 1987. Data collected by the Asian AIDS Project from San Francisco Health Department reports



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III. RELATED ISSUES

7. Perinatally Acquired AIDS

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The overwhelming risk factor identified in perinatally acquired HIV infections is the intravenous use of drugs, most often by the mother but also by her sexual partner. Greater than 70 percent of perinatally acquired AIDS is related to intravenous drug use, and in all likelihood this will increase as cases related to blood products decrease. An analysis of risk factors for 1,819 cases of CDC-reported AIDS in women between 1981 and 1986 found intravenous drug use (IVDU) listed in 52 percent of the cases. Although 21 percent listed heterosexual contact with a person at risk for AIDS, again the risk behavior, 67 percent of the time, was intravenous drug use.

PERINATAL INFECTIONS

One of the shortcomings of many discussions on perinatal HIV infection is that they often are not put in context with other perinatal infections. There is much to be learned when this context is utilized. Three time periods for perinatal transmission are definable. The first time period is referred to as antenatal or intrauterine transmission. The second time period is intrapartum, the time of labor and delivery. And the third time period is postpartum, after delivery. There already exists a great deal of information about other infectious diseases and these time periods of pregnancy. My purpose is to concentrate on HIV, but I will quickly summarize what is known particularly about viral infections in pregnancy.

It is well known in obstetrics that infectious diseases have a variable effect on the fetus. Some viruses have a direct effect on the fetus, causing congenital infections and/or teratogenesis. Others indirectly affect the fetus by causing illnesses in the mother that may lead to premature labor and delivery, and even death. Some viruses, such as the ones that cause the common cold, have never been demonstrated to have any effect at all.

Most viruses cross the placenta, and many cause identifiable changes in the placenta. Viruses have been cultured from amniotic fluid at different stages of pregnancy and also from abortuses and stillborns.

The outcome for many infections depends on the timing in gestation or on the presence or absence of viremia. However, even then there is no consistent rule. For instance, varicella, the virus that causes chicken pox, is more devastating to the fetus if maternal infection occurs within 4 days of delivery, causing a severe neonatal infection with a 30 percent mortality rate. Rubella's major anomalies occur if infection occurs in the first trimester, especially during the second month. When infection occurs at that time in gestation, approximately 20 percent of babies will have detectable anomalies at birth and an additional 10 to 15 percent will have abnormalities that appear later in life. There is a higher rate of recovery of the rubella virus from tissue obtained from elective abortions than there is from affected infants, suggesting some infections may be transient and leave no permanent sequelae.

The efficiency of in utero transmission of hepatitis B is dependent on the presence of the e antigen. Women who are HBeAb positive but HBeAg negative do not seem to transmit the disease intrauterinely. The risk of congenital herpes infections is at the time of labor and dependent on the route of delivery.

PERINATAL HIV INFECTIONS

HIV has been isolated from the placenta, amniotic fluid, and from abortuses and stillborns. It has also been isolated from cervical secretions, vaginal secretions, and breast milk, including colostrum. Transmission to the fetus, assumed in most cases to occur antenatally, is quoted in the scientific literature to be somewhere between 12 percent and 65 percent. Better done prospective studies from New York City (Selwyn et al. 1987; Minkoff et al. 1987) and data from Europe are now quoting a 50 percent transmission rate, determined by immunological studies. Actual virus isolation is less.

Efficiency of transmission may be dependent on the mother's stage of disease, with women who have full-blown AIDS being more effective transmitters than asymptomatic serologically positive women. Route of delivery does not seem to have an effect on transmission rates. There is a case report of only one twin being affected.

Although there is concern that pregnancy may accelerate the course of the disease in mothers, data again from the United States and Europe do not support this.

Transmission through breastfeeding has been documented. The World Health Organization using existing data believes this risk to be small. They continue to recommend breastfeeding, especially in countries in which the risk of formula use may be more detrimental than the unknown but seemingly small risk associated with breast-feeding. There is some evidence that freezing and then thawing collected breast milk may inactivate the virus.

Presently it appears that infected babies almost always become symptomatic by 2 years of age. However, some places are reporting asymptomatic children at greater than 3 years of age.

A controversial issue is that of a dysmorphology of the infant, especially involving facial features. Many centers have not been able to identify the facial characteristics described by Marion et al. (1986).

SCREENING AND COUNSELING ABOUT HIV

These factors have led to the recommendation that all women of childbearing age, especially those contemplating pregnancy or who may already be pregnant, be offered counseling and testing for HIV. Where and how this is to be done has been left to the individual institution. Many have expressed their concerns about the lack of qualified counselors and the enormity of time needed to do this properly, since the group of women presently at highest risk are cared for in publicly funded (underfunded) institutions, such as city and county facilities.

Recently, researchers at Kings County Hospital in Brooklyn expressed concerns that a large number of women "at risk" would not self-identify. Not commenting on their "small" numbers, they found that 7 out of 12 women with HIV positive cord bloods, (a total of 602 women screened) on interview admitted to being at risk. Five of the 12, 42 percent, did not report a risk behavior and would have gone undetected if the present recommendation of offering testing to self-identified at-risk women was followed. They did admit, however, that even the most skilled interviewer may be unable to persuade someone to reveal illegal activities by themselves or their partners.

UNANSWERED QUESTIONS

There are many unanswered questions about perinatal transmission of HIV. What effect, if any, does health status have on transmission rates? Intravenous drug using women are known to have more premature or intrauterine growth retarded infants. Does the course of the infection differ between preterm and term infants? Do transmission rates among partners of hemophiliacs differ stage for stage from partners of intravenous drug users? These are only a few of the unanswered questions that need to be addressed.

CONCLUDING COMMENTS

In counseling any woman considering pregnancy, or who may already be pregnant, about risk of conditions that may affect her offspring, we must provide the most complete and factual information possible. But we need to remember that the innate instinct to procreate can be extremely powerful. We also need to remember that the influence of culture and ethnicity greatly influence how counseling information will be utilized. The HIV-infected woman who chooses to take her chances with pregnancy is no different than the woman who through ultrasound or amniocentesis learns she is carrying an infant whose chances of survival are minimal, but elects to continue that pregnancy. She is no different from the woman with cancer who in learning she is pregnant refuses treatment for her cancer because it might harm her baby.

Conversely, if an HIV-infected woman decides to end her pregnancy she may face difficulties because many states have de-funded Medicaid funded abortions--the method of medical coverage the presently HIV-infected population of women is most likely to have. The primary and most important policy here is one of personal choice.

Pregnancy for most women, regardless of their circumstances, is a time of hope and optimism. HIV-infected women generally respond as many other women will when confronted with the prospect of delivering a less than perfect child, even at the expense of their own health by taking the position--"I'll take my chances." It is incumbent on us as providers to support that woman and her family, whatever the decision, in the most sensitive and nonjudgmental way possible.

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8. Minorities, Intravenous Drug Use, and Human Immunodeficiency Virus (HIV) Infection in Prisons

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The occurrence of the acquired immunodeficiency syndrome (AIDS) among minority communities in the United States represents a major public health concern. Although blacks and Hispanics constitute 18 percent of the U.S. population, they account for 39 percent of the cases of AIDS reported to Centers for Disease Control (CDC 1986). Heterosexual intravenous drug users (IVDUs) account for 35 percent of the AIDS cases among minorities compared to 5 percent among whites.

Intravenous drug use is a major risk factor for AIDS, involved directly in 25 percent of the cases reported to CDC, and indirectly among a majority of the pediatric cases and cases involving heterosexual contact with a member of an established risk group (Chamberland and Dondero 1987; Rogers 1987). Major public health interventions are indicated.

The overrepresentation of IVDUs as a risk category for AIDS among minorities raises major concerns, given that IVDUs represent a major transmission bridge to the heterosexual population (Des Jarlais et al. 1985). Seroprevalence data from civilian applicants to military service indicate a higher proportion of seropositives among minorities (Burke et al. 1987), which provides some indication of higher rates of heterosexual transmission among minorities.

Supported in part by grants DA04323 and DA04334 from the National Institute on Drug Abuse.

AIDS AND HIV INFECTION AMONG PRISON INMATES

Currently, minorities constitute a much higher proportion of the prison population than their proportion within the general population. In the Maryland State Division of Corrections, for example, 70 percent of the inmates are minorities. Within this same group, nearly 40 percent of the inmates have a preincarceration history of intravenous drug use. Given that many of these individuals are at high risk for infection with the human immunodeficiency virus (HIV), and that many may be difficult to access for public health interventions within the community, the prison setting should be considered as a possibility for organizing and conducting educational programs about HIV infection and AIDS.

The need to conduct educational sessions about HIV infection in the prison setting is also important because of its increasing incidence within prisons. Between 1982, when the first cases of the acquired immunodeficiency syndrome in prison inmates were reported (Hanrahan et al. 1982), and October 1986, when the National Institute of Justice (NIJ) completed a survey of 58 Federal, State and local correctional systems, 1,232 cases of AIDS had been identified in U.S. prisons (Hammett 1986). The seriousness of the problem is underscored with the observation that in the New York State prison system, AIDS represents the leading cause of death (New York State Commission of Corrections, 1986).

The geographic distribution of the 1,232 cases of AIDS identified in U.S. prisons through October 1986 parallels the geographic distribution of cases for which intravenous drug use was the primary risk factor as reported to the Center for Disease Control, AIDS Surveillance Program. The NIJ survey noted that 838, or 70.2 percent, of the cases were reported from New York, New Jersey, and Pennsylvania (Hammett 1987); whereas CDC surveillance data indicate that approximately 80 percent of the AIDS cases among IVDUs are from New York, New Jersey, and Connecticut.

The occurrence of AIDS in the correctional setting is not unexpected because two major risk groups for AIDS, intravenous drug users and homosexual/bisexual men, can be found in prisons. In several surveys, between 27 and 41 percent of inmates self-reported a preincarceration history of intravenous drug use, and between 3.6 and 7.0 percent self-reported a preincarceration history of homosexual activity (Anda et al. 1985; Decker et al. 1984; Hull et al. 1985). Corresponding measures within the prison population have been estimated as approximately 0.6 percent for ever-used intravenous drugs and 10 percent for male homosexuality (Institute of Medicine 1986). Thus, compared to the general population, prisons contain a disproportionate representation of IVDUs.

In one study, intravenous drug users clearly represent the major established risk group for AIDS in prison. Within the New York State prison system, which

conducts risk factor investigations on diagnosed cases of AIDS, approximately 95 percent of inmates with AIDS reported a prior history of intravenous drug use, whereas only 3 percent claimed themselves to be exclusively homosexual (New York State Department of Health 1987). These sparse data suggest intravenous drug use is a major risk factor in AIDS cases diagnosed in prison settings.

HIV SEROEPIDEMIC SURVEYS IN PRISONS

To help identify IVDUs as the major risk group for AIDS in prison, more seroepidemiologic surveys of HIV infection among inmates would be needed. To date, only a limited number of serosurveys have been reported from the correctional setting. Prevalence rates reported in studies examined have ranged from 0 percent in Iowa to 15 percent in Massachusetts (Hammett 1986, 1987; CDC 1987; Kelly et al. 1986; Polk et al. 1986). In European studies, the reported proportion of seropositive inmates has ranged from 0 percent in Cyprus to 16.8 percent in Italy (Harding 1987).

Recently, a study of 500 consecutive inmates entering a French prison showed 12.6 percent to be seropositive to the HIV antibody (Harding 1987). In another sample of 113 drug users in the same French prison, 61 percent were seropositive (Espinoza et al. 1987). These figures suggest that the overall proportion of seropositives in prison will be closely related to the proportion of intravenous drug users in prison (Harding 1987). However, because IVDU status was not assessed in the overall sample and the degree of overlap between samples was not reported, the association in these cases is suggestive rather than conclusive.

These reports suggest that prevalence of human immunodeficiency virus among prison inmates varies considerably by jurisdiction. Almost all of the prison systems, however, report only crude prevalence. Also, the prevalence of antibody to HIV in prison samples probably exceeds prevalence in the general population. For example, the 1 percent prevalence of HIV infection among entrants to a military maximum security prison (Kelly et al. 1986) contrasts with the 0.15 percent prevalence among applicants for U.S. military service (Burke et al. 1987). The two groups, however, are not strictly comparable because the samples were drawn at different times in the respective military careers. Of the nine seropositive inmates in the military prison, six were convicted for drug offenses (Kelly et al. 1986).

Available data suggest that a preincarceration history of intravenous drug use is probably the single most important risk factor for prevalent infection in the correctional setting. The association, however, is indirect. Additional support to identify IVDUs as the major risk group for HIV infection and AIDS in prison would require an epidemiologic survey of HIV infection among prison inmates.

If IVDUs represent the group of inmates at greatest risk for prevalent HIV infection upon entry into prison, then such data may assist correctional health officials to focus medical monitoring of symptoms for HIV related conditions, as well as further target educational interventions.

Seroprevalence studies of HIV infection among prison inmates are important for several reasons. First, given that the cost of treatment for patients with AIDS is considerable (Hardy et al. 1986; Scitovsky and Rice 1987), and that funds for correctional health care are budgeted annually by legislatures, seroprevalence studies provide a basis for projecting the number of cases of AIDS and AIDS-related complex in prison; and in turn, the requisite resources needed. Seroprevalence studies provide information that can supplement existing or planned educational interventions among prison inmates. Studies of HIV infection among incoming inmates provide baseline information on an important prison health problem.

INTRAPRISON HIV TRANSMISSION

Given that homosexual activity and intravenous drug use are practiced by a proportion of inmates during incarceration (Decker et al. 1984; Nacci and Kane 1982), seroprevalence studies of HIV infection among new entrants into prison provide an estimate of the reservoir from which intraprison transmission may occur.

That intraprison transmission may occur was suggested by a study conducted by the Maryland State Division of Corrections (Polk et al. 1986). This study involved approaching 338 inmates who had been incarcerated for at least 7 years prior to 1985; of the 137 volunteers tested, the two seropositives (1.5 percent) had each been incarcerated for 9 years. Although no baseline specimens were available, the extended duration of incarceration suggests that infection was probably acquired in prison. Because the response rate was low, bias cannot be excluded.

Subsequent studies have suggested that prevalence of HIV infection among entrants into prison may reflect risk of transmission. At a military maximum security prison reporting a baseline prevalence of 1 percent, serologic followup was performed on 567 inmates for whom negative baseline specimens were available; no seroconversions were identified (Kelly et al. 1986). In another prison system reporting a baseline prevalence of 7 percent, serologic followup was performed on 393 inmates for whom negative baseline specimens were available; the rate of transmission was 0.41 percent per prison-year (Brewer et al. in press). Although the samples from both reports included only inmates still incarcerated at time of followup, they suggest that the risk of intraprison transmission is low.

This information could provide a basis for the development of rational policies within a correctional setting. Without an effective vaccine available, current options to prevent intraprison transmission of HIV infection are limited. Distribution of condoms and clean syringes is unlikely without decriminalization of associated activities within prison. Mass screening with inmates informed of antibody status assumes that confidentiality can be maintained inside prison and that informed inmates will act responsibly. Segregation of seropositives involves enormous logistical considerations, particularly if the prevalence of infection is nontrivial. Incorrect assumptions could impair the theoretical risk/benefit ratio for each of these approaches. Further documentation of infrequent transmission in the prison setting, and an apparent direct relationship between prevalence at intake with risk of transmission would underscore the importance of education, rather than screening and segregation, as a rational approach for most correctional systems.

DIFFICULTIES IN STUDYING IVDU SAMPLE GROUPS

Given the illegal and deviant nature of intravenous drug use, access to IVDUs for study and public health intervention is difficult. Access through general population approaches is inefficient because intravenous drug use is relatively rare, and the nature of illicit drug use lends itself to concealment (particularly if individuals have not already been labeled as a user). Another approach to access drug users is through ethnographic and "street outreach" methods. Although these methods achieve a concentrated sample of users for study, they have problems. They depend upon accidental or purposive contacts who, in turn, refer other contacts; the representativeness of accidental contacts cannot be readily evaluated, and contact referrals are likely to be similar, which would reduce sampling variation.

Access to IVDUs for study has also been accomplished through drug abuse treatment programs. Although this approach efficiently yields a concentrated sample of users, only a small proportion of IVDUs are estimated to be in treatment at any given time (Maryland State Drug Abuse Administration 1983). Whether characteristics differ between treatment and nontreatment samples is unknown. A comparison of demographic data from the DAWN project (emergency room visits that involved heroin), the Drug Enforcement Agency Registry of Active Narcotic Users, and the CODAP program (i.e., data on admissions to drug abuse treatment programs) for the year 1973 suggests some differences by race and sex (Hunt 1977), though the results from each of these three programs have been criticized as biased (Tucker 1985).

That treatment samples may differ from nontreatment samples has been suggested by an examination of program dropouts. Characteristics of dropouts (reviewed in Baekland and Lundwald 1975) tended to differ from those who

remained in treatment; this suggests that if cross-sectional studies of IVDUs in treatment settings tend to select against dropouts, these results may be biased. Even between different treatment modalities, substantial demographic differences have been noted (Mandell 1974; Sells 1977); this suggests that study results derived from single treatment facilities should be interpreted with caution.

Not only interpretation, but application of findings from one setting to another should be carefully considered. For example, negative opinions about methadone users expressed by participants in the Heroin Lifestyle Study (Hansen et al. 1985) suggest that results derived solely from the treatment setting may be interpreted with scorn by an at risk, nontreatment sample. However, studies conducted in different treatment settings and with nontreatment street outreach samples can complement each other in terms of providing a broader perspective on defining high risk subgroups and use-related risk factors for HIV infection among IVDUs.

STUDYING IVDUS WITHIN THE PRISON SETTING

An alternative approach to access IVDUs is the prison setting. Prisons provide a high concentration of IVDUs. As previously stated, various surveys have reported preincarceration intravenous drug use to have occurred in from 27 to 41 percent of prison inmates. Also, samples of incoming inmates processed through a regional prison system may include a large number of IVDUs from a wide geographic area over a relatively short period of time (For example, approximately 1,500 IVDUs per year in the Maryland State Division of Corrections enter through a single facility.) If IVDUs evaluated upon entry into prison can be considered as a means to sample IVDUs from the community, then ongoing evaluation of the large numbers processed through the reception center of a statewide or regional system allows the opportunity to estimate geographic and secular trends of HIV infection among IVDUs.

The prison setting may be a reasonable means to access IVDUs for another reason. IVDUs who enter prison include those who have been treated for drug abuse and those who have not. In two nationwide prison surveys, approximately one-third of imprisoned heroin users had a prior history of methadone treatment (Barton 1980, 1982). This suggests that samples of IVDUs obtained at entry into prison may be more heterogenous with respect to drug-use related behaviors than samples drawn exclusively from treatment centers.

Using samples of inmates entering prison to draw inferences about HIV infection among IVDUs involves distinct limitations. Information obtained may be distorted because prisons select for IVDUs who commit crimes and cannot otherwise avoid incarceration. Not all IVDUs get incarcerated. Numerous reports, however, do indicate that a substantial proportion of IVDUs in

treatment have a history of arrest and incarceration (reviewed in Austin and Lettieri 1976). Street outreach surveys suggest that IVDUs with neither treatment nor prison records may not be unusual (SAODAP 1974; Drug Abuse Council 1975). Currently, the degree to which prevalence and risk factors for HIV infection differ between those with and without records of incarceration is unknown. Nevertheless, information obtained from the setting can complement data obtained from other (e.g., treatment) settings so as to provide a more complete view of HIV infection among IVDUs. Also, results of studies could provide the basis for refining educational interventions directed to large numbers of IVDUs entering and leaving prison.

CONCLUSION

Given that the occurrence of AIDS among blacks and Hispanics has been disproportionate to their representation in the general population (CDC 1986; Bakeman et al. 1986), and that minorities constitute a substantial proportion of the prison population in many jurisdictions, HIV infection among minorities in prison is a special area for concern. Within the Maryland State Division of Corrections, minorities constitute 70 percent of the prison inmates (T. Fordham Brewer, personal communication). In serosurveillance projects of incoming inmates to the Maryland Division of Corrections, the occurrence of prevalent infection among minorities has been elevated compared to whites, even after controlling for a history of intravenous drug use (Polk et al. 1986; Vlahov unpublished). Although reasons for an elevated prevalence of antibody to HIV cannot be determined from a cross-sectional survey, these preliminary findings underscore the need to develop or refine culturally relevant educational strategies in the prison setting.

At a time when the development of vaccines and antiviral therapies are still in their embryonic stages, effective educational strategies are needed to modify high-risk behaviors. Given that a substantial proportion of cases among minorities involve economically and educationally disadvantaged individuals who are culturally isolated from mainstream public health interventions, special efforts are indicated. Culturally sensitive community outreach programs represent one approach that has demonstrated promise. However, given the magnitude and scope of the problem, additional complementary strategies will also deserve attention.

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9. HIV Infection Among Prostitutes

Wayne L. Greaves, M.D.

Since the European epidemics of syphilis in the 16th century, there has been concern about prostitutes as a reservoir of venereal disease. This type of attention may reflect little more than their being an easy target. On the other hand, outbreaks of penicillin-resistant gonorrhea and chancroid have been associated with prostitutes. Now with the increasing numbers of heterosexually transmitted AIDS cases, the spotlight has again swung to prostitutes.

It is noteworthy that the percentage of men who contracted AIDS through heterosexual contact has remained constant at 2 percent over the last several years. On the other hand, 28 percent of all female AIDS cases (7 percent of the total cases since 1981), and 31 percent of those reported in 1986 (8 percent of the total cases in 1986), acquired AIDS through heterosexual contact. These data suggest that the risk for heterosexual women is increasing at a faster rate than for heterosexual men. Overall, the proportion of heterosexual cases is expected to reach 10 percent by 1991.

Although the role of prostitutes in the heterosexual spread of HIV infection is not known with certainty, there is concern, based mainly on data from Central Africa, that prostitutes may be an important reservoir of infection. However, in the United States, intravenous drug use remains a confounding factor and appears to be the major risk factor for HIV infection among prostitutes rather than prostitution per se.

STUDIES OF AFRICAN PROSTITUTES

There have been a number of studies of prostitutes and their customers in several countries in Central Africa where AIDS is almost exclusively a disease of

heterosexuals. Prostitutes in Central Africa have a high prevalence of HIV infection and are thought to be a high-risk group for HIV infection.

Most of the male patients in one study of AIDS in Rwanda gave a history of multiple contacts with prostitutes, and 43 percent of the women with AIDS were themselves prostitutes.

In another study, the rate of seropositivity for prostitutes (a term that apparently was applied to any woman who is sexually active outside of marriage, whether or not money is exchanged) found that 80 percent of 84 prostitutes were seropositive. However, a study of 25 men identified as customers found that only 7, or 28 percent, were seropositive. The 25 men reported a median of 31 sex partners each year, 30 of them prostitutes.

In Kenya, a study of 90 women identified as prostitutes found that 49 (54 percent) were seropositive, three-fourths of whom had symptoms of AIDS related complex (ARC). However, a study of 35 sexually active men found that only 3 (9 percent) had antibodies, compared to 2 of 45 (4 percent) medical personnel studied as controls.

STUDIES OF AMERICAN PROSTITUTES

In the United States, limited data exist on the seroprevalence of HIV infection among female prostitutes and on their mode of acquisition of infection. Among the currently available studies, the prevalence varies widely. In Miami, 10 of 25 prostitutes (40 percent) who visited an AIDS Screening Clinic for testing were seropositive–8 of the 10 admitted intravenous drug use. In Seattle, Washington, mandatory testing in 1985 of 92 women arrested for prostitution, using the ELISA test, found that five (5.4 percent) were seropositive. Retesting at a later date with the more accurate Western Blot test found that none were seropositive. A 1986 study of 35 women, all but two of them prostitutes who were recruited at a Sexually Transmitted Diseases Clinic, found that none were seropositive. In New York, in a voluntary study conducted by Don Des Jarlais of the New York State Division of Substance Abuse Services, two-thirds of 20 women who used intravenous drugs were seropositive. In a companion study interviewing 75 women in jail for prostitution, one-third to one-half were intravenous users, of whom Des Jarlais assumes that two-thirds would be likely to be seropositive, though he did not test the women in jail for antibodies. Tests of stored blood samples from intravenous users in New York City, dating back to the late 1970s, show that 1 out of 11 (9 percent) from 1978 were seropositive while in 1979, 14 out of 49 (29 percent) were seropositive.

A voluntary study of women in jail in Orange County, California, found that 10 out of 400 women (2.5 percent) were seropositive, almost all of them intravenous

users. The population studied included mainly street prostitutes. In San Francisco a voluntary community study found that 9 of 220 (4 percent) sexually active women in San Francisco were seropositive and that the risk was the same for prostitutes and nonprostitute women. A study of prostitutes from an escort service showed HIV infection to be uncommon. In yet another study, 13 of 26 (50 percent) street prostitutes in Washington, D.C. were positive for HIV antibody by both ELISA and Western Blot. All 13 seropositive prostitutes used intravenous drugs.

In a recent multicenter collaborative study by the Centers for Disease Control, the prevalence of HIV infection among prostitutes varied widely in different regions of the country from 19 percent in Miami to 57 percent in Newark, New Jersey.

METHODOLOGICAL PROBLEMS OF STUDIES

Almost all the studies of HIV seroprevalence among prostitutes have been plagued with difficulties of one sort or another. The Miami study, for example, was done at an AIDS Screening Clinic, where most of the clients are persons who already have symptoms suggestive of AIDS or those who believe they are at risk for AIDS. Thus, the seropositivity rate may not be reflective of the general prostitute population of Miami but only of those who attend the clinic. The Seattle study was based on the ELISA test. Retesting at a later date with the more accurate Western Blot test failed to identify any seropositives. Studies of women in jail may also be biased because persons in prisons do not always believe they have the right to say no when asked to participate in a study, and the group in jail typically represents street prostitutes. The voluntary study in San Francisco has been criticized by some epidemiologists because of the likelihood that the methods used to recruit study subjects resulted in a nonrepresentative sample.

Perhaps a larger problem results from the fact that none of the studies used the same definition for a prostitute. It is clear that prostitutes who work on the street are more likely to be intravenous drug users and to be at greater risk of HIV infection, whereas persons working with escort services are less likely to use intravenous drugs or to be HIV seropositive. The many definitions of prostitution and prostitutes make it difficult to compare the seroprevalence in one group with the seroprevalence of another group or with prostitutes in general.

It has been suggested that there are significant behavioral differences between prostitutes in Africa and in the United States. The use of condoms appears to be more frequent in the United States than in Africa. However, our data in Washington, D.C., do not support the suggestion reported elsewhere, that most street prostitutes use condoms for sexual contact with customers.

Another difference between prostitutes who have been diagnosed with AIDS or those who have tested positive for antibodies in the United States versus Africa is the relative absence of intravenous drug use among African prostitutes. Such drug use is reportedly rare among prostitutes in Central Africa. However, many clinics in Rwanda and other Central African countries are not able to sterilize needles between patients because of the prohibitive cost, and this may be a factor in transmission of the virus.

Finally, it has been suggested that female genital circumcision and infibulation are more common in Central Africa than was previously thought, and that these may be risk factors for HIV infection. The data from the Central African studies show that a lower percentage of male customers (9 to 28 percent) compared to female prostitutes (54 to 90 percent) are seropositive and suggest that female-to-male transmission is not as efficient as male-to-male transmission.

CONCLUSION

In summary, the data on the transmission of HIV infection from prostitutes to their customers are limited at best. Although theoretically it would seem that prostitutes should be considered major reservoirs of HIV infection, the data in the United States at the present time do not unequivocally support this. Because, however, the virus can be cultured from cervical secretions, men who use the services of prostitutes should wear condoms to minimize their risk of exposure to the virus and the risk of transmitting infection to their consorts.

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10. Perspectives from the Office of Minority Health, DHHS: Minority Health Status and AIDS

Jacqueline Bowles, M.D.

MANDATE OF THE OFFICE OF MINORITY HEALTH

In 1984, former Secretary Margaret Heckler commissioned a task force within the U.S. Department of Health and Human Services (DHHS) to comprehensively examine the health status of blacks, Hispanics, Asians and Pacific Islanders, and Native Americans in this country. The task force, composed of senior Public Health Service (PHS) officials, was headed by Dr. Thomas E. Malone, then the Deputy Director of the National Institutes of Health. After a little more than one year, the task force published its findings in August 1985 as the *Report of the Secretary's Task Force on Black and Minority Health.*[1]

The task force analyzed mortality data from 1979 to 1981 and used the statistical technique of "excess deaths" to quantify the minority-nonminority health status disparity. Excess deaths represent the difference between the number of deaths observed in a minority population (prior to age 70) and the number of deaths that would have been expected (prior to age 70) if the minority population experienced the same age- and sex-specific death rate as the nonminority population. For the purpose of its analysis the task force used the non-Hispanic white population as the standard for comparison.

[1]Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Using this technique, the task force identified six causes of death that together accounted for greater than 80 percent of excess mortality among minorities; the ranking and relative importance of these causes of excess death differ for each minority group. The six minority health priority areas identified by the task force were: cancer, cardiovascular disease and stroke, diabetes, homicide, unintentional injury, and infant mortality.

The causes of excess death identified by the task force represent critical health challenges for many minorities. Furthermore, their presence accentuates the urgency of the threat that HIV infection poses to minority populations.

The magnitude of the minority health problem detailed by the report, as well as the large of number recommendations it contained, made it clear that the creation of some type of mechanism to address these problems was required. The Office of Minority Health (OMH) was established in December 1985 to coordinate and to stimulate the implementation of the report's recommendations.

FACTORS CONTRIBUTING TO THE POORER HEALTH STATUS OF MINORITIES

When considering the impact of the HIV epidemic on minority populations, it is important to remember the context in which many minorities, and especially minority intravenous drug users (IVDUs), experience the HIV epidemic. This context is one of poverty, other significant health problems, and limited resources to address health needs.

The task force reviewed data indicating that low income and lack of health insurance are among the most serious barriers to accessing health care. Minorities are disproportionately represented among impoverished people. When financial resources are limited, other financial needs, such as the need for food, clothing, and shelter, often supersede health needs.

In studies comparing blacks to non-Hispanic whites, there are differences in patterns of health care financing and utilization that have important implications for health status. For example, blacks are more likely than non-Hispanic whites to rely on public assistance to finance health care and are also more likely to not have health insurance or to be underinsured. Blacks are less likely than non-Hispanic whites to have a "usual source" of primary care, such as one physician who sees them on a regular basis and are more likely to receive health care from several different providers at a hospital-based outpatient clinic or emergency room. None of these patterns foster continuity of care, early diagnosis, or the use of preventive services—which are all essential to promote and maintain good health. These patterns are particularly relevant to health care financing and utilization patterns of IVDUs.

In general, minorities are more likely than nonminorities to live in urban inner cities. Urban public hospitals, which are the major sites of health care delivery for many minorities, especially IVDUs, carry much of the burden for uncompensated care. Many minorities at greatest risk for HIV infection live in urban inner cities where health resources are already maximally stretched and there is little room to expand services.

OMH AIDS PROGRAM

At the time the task force was examining data and preparing its report, AIDS had not been recognized as a health priority area for minorities. However, soon after the office was established, it became evident that OMH had an important role to play in helping DHHS address the HIV epidemic. In a manner that is consistent with its mission, OMH works closely with PHS agencies and other DHHS divisions to advocate minority health concerns in regard to HIV infection. OMH efforts emphasize:

1. the need to bring information about HIV infection closer to the people–the need for credible, grass roots, community-based minority organizations to be empowered to design and deliver prevention messages and programs
2. the need to foster innovative approaches to the prevention and treatment of HIV that integrate the specific sociocultural and economic characteristics of minority populations and subpopulations
3. the need for greater minority input into all phases of policy and program development that impact upon minority populations
4. the need for greater minority involvement in AIDS/HIV-related data collection and research efforts

OMH has worked in a number of ways to facilitate minority group input into DHHS AIDS programs and policies and to raise awareness about HIV infection within minority communities. Selected activities include:

- *Minority AIDS Strategy*
  Early in 1987, OMH proposed a minority AIDS strategy for PHS. Some of the concepts presented in this strategy were adopted within the programs of various PHS agencies.

- *PHS AIDS Executive Task Force*
  The Director of OMH, Dr. Herbert Nickens, is a member of the PHS AIDS Executive Task Force. This task force coordinates all HIV-related activities within PHS. Dr. Nickens and other members of the OMH staff have worked to address minority concerns by participating in a number of the task force subcommittees.

- *Minority AIDS Advisory Group*
  In late spring of 1987, OMH convened a small group of minority professionals involved in AIDS to advise the office regarding specific problems faced by minorities in relation to HIV infection.

- *Minority Leadership Forum on AIDS*
  In June 1987, OMH organized the Minority Leadership Forum on AIDS, where leaders representing national minority organizations and minority health professionals met with PHS officials to discuss the implications of HIV infection for minorities and the need for a national strategy to address these issues.

- *CDC Conference*
  OMH provided the catalyst for and cosponsored a conference organized by the Centers for Disease Control–"AIDS in Minority Populations in the United States"–held in Atlanta, Georgia, in August 1987. Over 1,000 people attended this conference to discuss the needs of minorities in relation to HIV infection and strategies to help PHS become more responsive to these needs.

- *National Medical Association*
  For 2 consecutive years OMH funded HIV infection and AIDS workshops for minority physicians during NMA annual national conventions.

- *Southern Christian Leadership Conference*
  The SCLC, founded by Dr. Martin Luther King to advance human rights, has recently implemented a national campaign to educate blacks about HIV infection and AIDS. OMH cosponsored one of their first activities in this campaign–"The National Conference on AIDS and the Black Community," held in May 1987 at Howard University.

- *Urban Coalition, Black Church Initiative*
  Recognizing the influential role of the church within the black community, OMH has funded an Urban Coalition initiative to develop a national HIV infection prevention program through black churches.

- *National Council of Negro Women*
  The NCNW has recently begun its national campaign to educate black families about HIV infection. OMH contributed funding for a special workshop on HIV held during their national convention held November 1987.

- *KCET Programming*
  The media is an important vehicle for reaching minority populations. OMH has contributed funding to develop a program about blacks and AIDS that will air on the Public Broadcasting System (PBS) in the near future. This program is being designed so that it can be used as an educational tool for HIV infection prevention programs.

- *Black Entertainment Television (BET)*
  BET was funded by DHHS through the Assistant Secretary of Public Affairs, Stephanie Lee-Miller, to produce a "magazine-style" production on AIDS among blacks. This program aired for the first time in October 1987 on BET, a popular cable channel that is well known nationally for black entertainment and music programming. OMH provided consultation with BET for this project.

- *Technical Assistance*
  OMH provides technical assistance to minority organizations and individuals who are interested in developing strategies and programs to address HIV infection in minority communities.

- *Fiscal Year 1988 Activities*
  Congress appropriated approximately $1.4 million to enable OMH to expand its AIDS education and prevention initiative for minority organizations.

CONCLUSION

In order to have a positive impact on the course of the HIV epidemic among minorities, it is essential to first recognize the diversity of the groups within minority populations at risk of HIV infection—homosexuals/bisexuals, IVDUs, heterosexuals, women, and youths—as well as the diversity of the subcultures within minority groups. These subcultures are identified by factors such as country of origin, language, social class, and location within the United States.

Our challenge in attempting to stem the spread of HIV infection is to design different educational strategies that present messages in languages and formats that are relevant to different groups. To be effective, strategies to prevent HIV infection must involve people who are familiar with or are a part of the community the educational message is attempting to reach. Programs for IVDUs will require expanded use of street workers and other forms of outreach. Such strategies require innovation and creativity.

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11. AIDS, IV Drug Users, and Minorities: Health Care Financing Issues

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The AIDS epidemic in America is justifiably regarded as a crisis. It has already exacted a terrible toll on many communities, and projections for its future scope are grim. But the care of people with AIDS/ARC also exacts a financial toll, and efforts to pay for that care reveal anew some old problems with the financing of all health care.

In this chapter some features of the current system for financing health care are reviewed and some features of the AIDS epidemic that are stressing that system are discussed. Special issues related to intravenous drug users are highlighted. Current data on the costs of AIDS care in the United States are presented, along with some thoughts on four important policy questions.

FEATURES OF THE HEALTH CARE FINANCING SYSTEM

Complexity

Health care financing in our country is enormously complex. The money that pays hospitals' and doctors' bills, prescription drug charges, and the like comes from several private sources and many levels of public ones (see table 1).

A majority of Americans have insurance that covers a substantial portion of their medical care bills. This insurance is most often provided through their employment, although approximately 10 percent of all private health insurance is purchased by the policyholder on an individual basis. Minorities are almost

Table 1.—National expenditures on personal health care in 1986, by source of funds ($ billions)

Expenditure category	Total all sources	Private				Government		
		Total private	Out of pocket	Private insurance	Other	Total Government	Federal	State and local
Hospital care	179.6	83.9	16.8	64.9	2.2	95.7	76.5	19.2
Physician services	92.0	64.9	26.2	38.7	.1	27.1	22.0	5.0
Nursing home care	38.1	20.0	19.4	.3	.3	18.1	10.1	8.0
Drugs	30.6	27.3	22.9	4.5	---	3.2	1.7	1.5
Other	63.7	48.0	30.8	14.5	2.5	15.9	11.5	4.4
Total	404.0	244.1	116.1	122.9	5.1	160.0	121.8	38.1

Source: Department of Health and Human Services, Health Care Financing Adminstration, Office of the Actuary, Division of National Cost Estimates, June 1987

twice as likely to be uninsured as whites (Sulvetta and Swartz 1986). Thus, any approach to financing AIDS care that relies on private insurance puts minorities at a disadvantage.

The fact that one has an insurance policy, though, does not mean that all of the bills are paid by that policy. In fact, the drive to contain health care costs in the past 15 years has caused tremendous growth in the use of deductibles (an amount that must be paid by the insured before the policy begins to pay off) and copayments (a percentage of the bill covered by insurance that must be paid out-of-pocket by the insured). While there is considerable debate over the effects of such "cost sharing" features (Relman 1983), they have become standard; "first dollar" type coverage is of a vanishing breed (except for HMO or other "managed care" arrangements). Most people covered by a private policy will contribute some of their own "private" funds (in addition to their insurance premiums) to pay their medical bills.

Public Funding of Health Care

Public funding of health care costs comes from all levels of government: Federal, State, and local. The Federal Government's largest contribution to health care

funding is to Medicare, which pays for those over 65, the disabled (after a 2-year waiting period), and certain other categories of people, including a "disease specific" group of those with end-stage renal disease (ESRD). Most people with AIDS/ARC are under 65 and do not live long enough after their AIDS diagnosis to qualify for disability. Andrulis et al. (1987) reported only 2 percent of AIDS patients in U.S teaching hospitals qualified for Medicare. But the advent of zidovudine (also known as azidothymidine or AZT) and other antiviral therapies may prolong life expectancy (Fischl et al. 1987) and thus increase Medicare's share of the AIDS financial burden, without necessarily reducing the burden of other sources of payment.

Nearly a quarter of Americans under 65 are uninsured or underinsured (Bazolli 1986). Medicaid, whose costs are shared evenly with the States, pays for some of the medically indigent, including most people with AIDS/ARC who are IV drug users. Each State, however, has enormous latitude in determining the criteria for eligibility and some latitude in determining benefits. Andrulis et al. (1987) compared States that have "liberal" Medicaid programs to those having more restrictive policies and found wide differences in the impact of the disease on hospital revenues. Pascal (1987) has estimated that Medicaid will pay about $10 billion, or 3 percent of total Medicaid program costs, for AIDS care in the years 1986-1991. This represents 26 percent of the estimated $38 billion in total national direct medical AIDS costs. In some States, particularly those with large numbers of IV drug users, Medicaid is thought to provide for as much as 40 percent of AIDS funding.[1] The Federal Government also pays for the Veterans Administration system, which cares for about 5 percent of AIDS inpatients.

In addition to Medicaid, some States also provide funds (usually through county governments) for the "medically indigent"—those too well off to qualify for Medicaid but unable to afford their medical bills. Most cities and counties either supplement State funds or, in the absence of State funds, provide their own contributions to care for the uninsured. This happens both directly, through the allocation of funds to pay for uncompensated hospital or nursing home care, and through subsidies of city and county-run institutions—hospitals, clinics, and nursing homes.

Providing Coverage for IVDAs with AIDS

So our system involves multiple payers and multiple levels of government. Not only is this true in the aggregate, but it is also often true for a particular patient as well.

[1]This represents an intermediate estimate of costs, with the range from $2 to $47 billion in Medicaid costs and $15 to $113 billion in total national costs.

Let us take the example of a male IV drug user hospitalized for pneumocystis carinii pneumonia at San Francisco General Hospital. This patient probably has MediCal (California's name for its Medicaid program); his hospital stay is therefore paid for (in part) by both Federal and State funds. But Medicaid reimbursement rarely covers the actual cost to the institution (Potts et al. 1986). Where, then, does the balance come from? Part comes from excess revenues (hospitals rarely call them profits) from the hospital's few privately insured patients. The remainder is made up from local tax funds with which the city and county cover the hospital's annual operating deficit. This patient's bill has therefore actually been paid from a range of public and private sources.

In the case of the uninsured patient, his or her charges usually appear in papers and hospital records as "self-pay." This is, in reality, usually "no pay," and represents "bad debt" or "charity" care; again, this will be at least partially subsidized by insured patients in private institutions and tax funds in public ones.

The Interaction Between Financing Mechanisms and Services Offered

A distinct interaction exists between financing mechanisms and the services offered by providers. The form and extent of funding affect the type and amount of services that will be rendered. There are two main forms of this interaction. The first is a more or less conscious effort to provide incentives (or disincentives) through payment mechanisms or levels. The introduction of Medicare's Prospective Payment System (PPS) for inpatient care is a well-known example of such conscious incentives. The PPS approach, now being increasingly adopted by other public and private payers as well, essentially pays hospitals a set fee based on the average cost of a patient with that diagnosis, regardless of how long that individual patient stays. Hospitals are therefore under strong pressures to discharge the patient as early as possible, since additional inpatient days add to their costs, but not their revenues.

A more subtle form of incentives involves the less conscious reaction of patients and the "medical marketplace" to the existence of insurance for certain services—a concept called "moral hazard" in the insurance field. Another name for the phenomenon might be the "woodwork principle"—if a service is covered by insurance, people will come out of the woodwork to get it (Manning et al. 1987). The phenomenal growth of the demand for (and costs of) dialysis and other treatments for ESRD has far surpassed anyone's predictions. It has also made many lawmakers and others wary about the accuracy of projections of the demand for newly insured services, such as those proposed for AIDS.

Paradoxes arise from the clash between these intended and unintended consequences of decisions about health care financing. Medicaid, for example, will

pay for most direct medical expenses for a person with AIDS/ARC but requires that he or she be fairly destitute before it will do so. It is, therefore, often to the person's advantage not to work so as to not jeopardize eligibility.

As a result, the system of services continues to be skewed towards patterns and sites of care that often make little sense in economic or human terms. HIV-infected infants, usually the children of IV drug using mothers, languish in hospitals for lack of anywhere else to go. Adults with AIDS also sit on medical wards for months because of the absence of appropriate outpatient settings. This lack of facilities is attributable to many factors; one such factor is surely the absence of funds to pay for them, at least until relatively recently.

FEATURES OF THE AIDS EPIDEMIC THAT AFFECT HEALTH CARE COVERAGE

Two features of the AIDS epidemic profoundly influence financing issues: its local variability and its clinical unpredictability.

Local Variability

In a sense the United States is not having one national AIDS epidemic, but many local and regional ones. Arno and Hughes (1987) highlight differences in the policy responses of New York and San Francisco; the responses from Philadelphia, Boston, and Los Angeles show even more variation. These cities have substantial differences in the numbers and types of persons affected, in turn influencing the extent of public support for funds to pay for care, and the degree of private voluntary efforts to fill the gaps. In San Francisco, for instance, people with AIDS/ARC have been, until relatively recently, overwhelmingly gay and bisexual men, and usually white. New Jersey, on the other hand, sees a disease whose victims are most often IV drug users or their sexual contacts or children of IV drug users; a majority are black and Hispanic. The problem of AIDS among intravenous drug users is largely a problem of blacks and Hispanics (See figure 1). Forty-three percent of minority people with AIDS/ARC have IVDU as at least one risk factor, compared with 14 percent of whites (see table 2).

These differences, along with different political and financial circumstances in different cities and states, have led dramatic variations in State expenditures for AIDS. Rowe (1987) reports that in fiscal year 1987-88 funds for AIDS allocated by State legislatures ranged from $7,500 (Iowa) to $58,000,000 (California) and dollars per diagnosed case from $147 (Iowa) to $12,791 (Alabama). Under such circumstances, given local and State involvement in health care financing, substantial differences exist in the kinds and amounts of available services.

Figure 1. AIDS cases by race transmission category

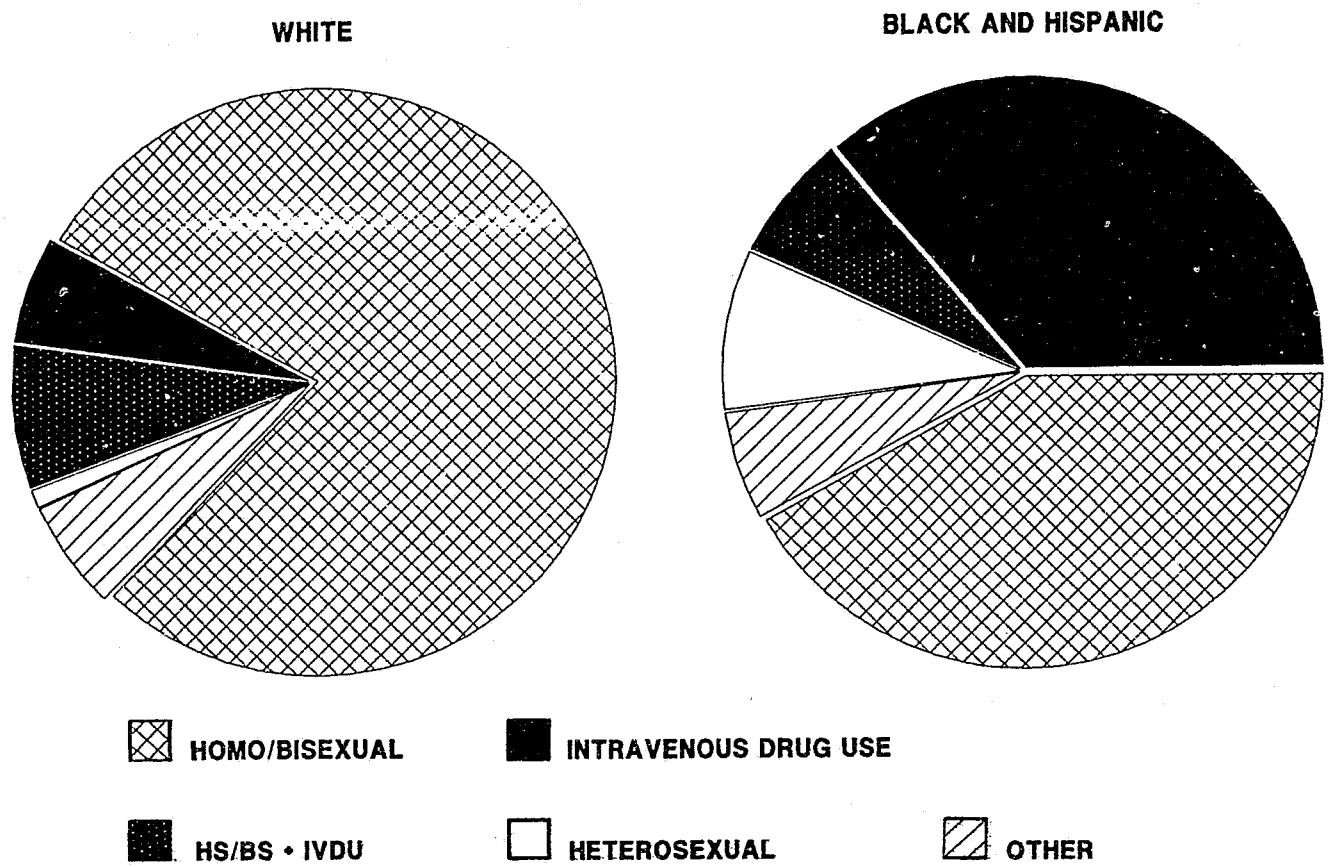

Table 2.–Adult AIDS cases

	White		Black		Hispanic		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Homo/bisexual	24,609	79	4,948	39	3,306	48	327	68	33,190	65
IVDA	761	6	4,526	36	2,457	36	47	10	8,791	17
Both	2,452	8	907	7	454	7	23	5	3,836	8
Hemophiliac	440	1	33	0	33	0	12	3	518	1
Heterosexual	341	1	1,437	11	258	4	9	2	2,045	4
Transfusion	902	3	174	1	84	1	31	6	1,191	2
Undetermined	607	2	625	5	303	4	29	6	1,564	3
Total	31,112	100	12,650	100	6,895	100	478	100	51,135	100

Source: CDC Weekly AIDS Surveillance Report, January 25, 1988.

Clinical Unpredictability

The clinical unpredictability of AIDS poses another problem for financing. AIDS is a protean syndrome involving all organ systems and showing tremendous variability and volatility in clinical presentation (Volberding 1985). The financing system was just adapting to the notions of "alternative" (to inpatient) sites of care at the start of the AIDS epidemic in 1981. But AIDS complicates the definitions of "eligibility" for hospice or nursing home care, because people with AIDS/ARC, while they have a terminal disease, can get better or worse quite rapidly, with onset or treatment of infections, dehydration, etc. As a result, it is not unusual to complete a 2- or 3-week process to declare someone "appropriate" for a certain level of care, only to find that that person is no longer appropriate when the papers come through. The fact that HIV is neurotoxic, with resultant anxiety, depression, and frank dementia, also complicates placement of people with AIDS/ARC. And, of course, some people with AIDS/ARC will continue substance abuse, often rendering them ineligible for certain facilities.

There are, therefore, reimbursement obstacles to the creation and provision of services and institutions appropriate for the care of people with AIDS/ARC. Voluntary efforts have done much to fill the gaps, but these systems are often ill-suited to handle the special logistical and cultural problems of IV drug users, in part because IVDU's often do not have the social support systems that allow home care and other alternative modes of care to function (Traska 1986).

CURRENT ESTIMATES OF COSTS

The direct medical costs of AIDS can be divided into three components: inpatient hospital charges, inpatient physician fees, and outpatient care—including physician visits, drugs, nursing home care, and home care.[2] Data are most reliable for hospital charges, but estimates vary widely by time and location from under $2,500 to over $145,000 lifetime costs per case (Sisk 1987). Scitovsky and Rice (1987) suggest that the national average is in the range of $60,000 to 75,000. Several factors account for the differences in charges. Hospital charges vary by region. So does the percentage of people with AIDS/ARC belonging to different risk groups; of note is that Kaposi's sarcoma (KS), found almost exclusively in gay and bisexual men, carries a better prognosis and lower costs.

IV drug users would be expected to have higher costs because they present with infections other than KS. Most important, however, is the influence of length of stay on costs. Scitovsky et al. (1986) articulate the widely held belief that San Francisco's short hospital stays are a direct result of the outpatient services available there. And the length of hospital stay is dependent not only on the medical condition of the patient but also, particularly with IV drug users, on the presence of alternatives to inpatient care.

Physician fees for inpatient hospital stays are rarely included in reports of AIDS costs because of the difficulty of obtaining reliable data. At the University of Pennsylvania, for instance, each department has its own Faculty Practice billing operation; each has different hardware and software, and often different identification numbers for the same patient. The task, therefore, of accounting for physician charges for inpatient attending physicians, consultants, and procedures performed is a formidable methodological challenge.

Even harder is the collection of data relating to costs of outpatient treatment. While several estimates have been done (see table 3), Scitovsky and her colleagues are currently engaged in a more definitive effort to study this question prospectively. Their methodology relies on people with AIDS/ARC keeping detailed logs of money paid for drugs, doctors' visits, etc. Such a methodology clearly requires fairly well-organized individuals and may be less successful with a study population containing large numbers of IVDUs.

POLICY QUESTIONS

Four major policy questions are raised by the challenge of financing AIDS/ARC care.

[2]This discussion excludes consideration of the indirect costs of the disease such as lost income or research and education costs. These subjects are explored by Scitovsky and Rice (1987) and Iglehart (1987).

Table 3.–Estimates of lifetime outpatient AIDS costs

Organization	Cost
Health Insurance Association of America survey (national)	$6,510
San Francisco General Hospital	$3,000
New England Deaconess Hospital	$2,668

Sources: Office of Technology Assessment 1987; Scitovsky et al. 1986; Seague et al. 1986.

First, will we have one comprehensive system to pay for care of people with AIDS/ARC? Not soon, I think. Several proposals have been made along these lines; they range from the designation of AIDS as a Medicare categorically eligible disease to the creation of a special pool of funds. There are serious questions, however, about the equity of disease-specific financing: why should AIDS entitle one to Federal funds denied a diabetic or stroke patient? In addition, those in and out of Congress with special concern for Medicare are unlikely to tie the future solvency of the Medicare Trust Fund, already a controversial issue, to the uncertainties of the future AIDS epidemic. Therefore, even as AIDS throws a spotlight on what Arno (1987) has called the "tragic flaws" in the health care system, in the short term it is more likely to result in a series of patches to that system than a major overhaul. This is of particular importance for those people with AIDS/ARC who are IV drug users, because they will be dependent on Medicaid and the public hospital system, both of which are facing major crises.

Second, how can financing mechanisms be created which encourage, rather than discourage, creative modes and sites of AIDS care, particularly for IV drug users? We will need new forms of care in the course of this disease: primary care in drug treatment programs, medical day care, and combinations of residential and medical services (Coye et al. in press). These developments can either be stimulated by flexibility and innovativeness in the financing arena or hindered by rigidity.

There are some promising developments in this area, both at the Health Care Financing Administration (HCFA) and at the State level. New Jersey and New Mexico have obtained "Medicaid waivers" from HCFA that will allow them to use Medicaid funds to pay for alternative forms of care and, most importantly, for case management to coordinate services. Such developments in the financing arena must expand to pay for innovative approaches.

Third, how can policies be developed to maintain private participation in the funding of AIDS care? If AIDS is not to become overwhelmingly the burden of public payers, a variety of approaches to encourage private sector participation will be necessary. Possible areas for constructive regulatory intervention include health insurance industry practices such as the use of antibody testing in underwriting insurance, health insurance policies that exclude HIV related conditions, and the use of the definition of "pre-existing condition" (a standard exclusion from coverage by many insurance policies) as applied to HIV infection. Arno (1987) has pointed out that the trend toward self-insurance by large companies effectively removes from regulatory protection an increasing percentage of Americans' health coverage. This trend may also have to be addressed.

One promising area involves the 1985 Consolidated Omnibus Reconciliation Act (COBRA) provision, which guarantees the rights of most terminated employees to continue their health insurance at essentially group rates for 18 months after termination. The time period could be extended, and State or Federal subsidies arranged to pay the premiums. This would keep private-sector coverage for some individuals who would otherwise be forced to rely on Medicaid.

Most of these approaches, however, will not affect many IV drug users directly because they are infrequently covered by private insurance. Such steps will, on the other hand, help preserve scant public funding for those who have no alternatives.

Fourth, how can incentives to care for people with AIDS/ARC–especially IVDUs–be developed for various providers? Many AIDS patients, particularly those with a drug-use background, will be money losers for hospitals and other institutions because of their high resource use and low reimbursement rates. In addition to the immediate financial risks of accepting AIDS patients, there is concern over their effect on the public perception of the institution—i.e., the fear that other, more financially attractive, patients will avoid a facility known to have large numbers of AIDS patients.

Physicians also have some disincentives to care for people with AIDS/ARC because of the extraordinary demands of managing complicated *social* needs along with a complicated medical illness. If public hospitals and the dedicated physicians currently caring for people with AIDS/ARC around the country are not to be completely overwhelmed, ways must be found to attract a wider variety of private sector providers to the task of AIDS care.

CONCLUSION

The AIDS epidemic has brought into sharp relief many existing problems in the health care system. "Catch-22s" of irrationality persist, and the patchwork quilt of health care financing threatens to unravel under the expected heavy strain of AIDS related expenditures. While we look for ways to solve these challenges in the framework of our traditional financing system, we should also consider it an opportunity to reexamine long-standing questions about the fairness and logic of that system as a whole.

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